Two Clinical Lectures
ON
ENLARGEMENT OF THE PROSTATE.

Delivered at the Medical Graduates' College and Polyclinic

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LECTURE II.[1]

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GENTLEMEN,—Passing on to the treatment of enlargement of the prostate, you are aware that in this field of research considerable activity has been displayed by surgeons in recent years as regards operative interference. Holding, as I do, that in certain selected cases of this disorder an operation of some kind is advisable, and in a small minority imperative, to save the patient's life or ameliorate his sufferings, I have no hesitation in saying that in the vast majority the only admissible treatment is judicious and cleanly catheterism combined with careful hygienic living; and that by these means life will be more prolonged and existence rendered more tolerable than by any other.

When enlargement of the prostate is unattended by any symptoms no treatment is necessary. If, however, decided symptoms of obstruction are present, but the bladder contains no "residual" urine, or only an ounce or two, the question arises as to what treatment, if any, is desirable. In such cases I am in the habit of passing a large steel dilator (Fig. 4) as far as the bladder once a week and leaving it in position for 10 or 12 minutes, commencing with a No. 11 or No. 12, English scale, and gradually advancing to No. 15 or No. 16. I entirely concur in the opinion of my colleague, Mr. Reginald Harrison, as to the beneficial effect of this simple procedure. It probably does not stay the progress of the disease, but the periodical introduction of the dilator causes absorption of the gland around the urethra and maintains the patency of the channel, thus staving off for an indefinite period the necessity of having recourse to habitual catheterism. It is customary in cases of this kind in the incipient stage of enlargement to administer ergot with a view to causing reduction of, or retarding the advance of, the outgrowth. I am in the habit of employing the liquid extract of this drug combined with a saline both in hospital and private practice. It is difficult to say definitely whether the ergot has any effect in staying the advance of the enlargement, but it seems to relieve congestion, and patients undoubtedly express themselves as improved under its administration.

FIG. 4.

Jaccaud

It will, as a rule, be unnecessary to have recourse to the habitual use of the catheter till the residual urine amounts to between three and four ounces, but if the frequency of micturition at night is such as to affect injuriously the patient's health through want of sleep it will be desirable to commence earlier. When, however, once about four ounces of residual urine have been reached habitual catheterism must be employed, and the patient enters on what is termed "catheter life," from which he can scarcely ever recede. When the "residual" urine is limited to four ounces or less it will, as a rule, be sufficient to pass the catheter once in the 24 hours and the best time for doing this is at bedtime, so that he may have several hours of sleep afterwards. If six ounces are retained the catheter should be employed twice daily; if eight or 10 ounces three or four times daily. When all power of voluntary micturition is lost the catheter must be used whenever the desire for urination is decidedly felt, generally every four hours or so. On no account should the patient be limited to any specific time within which he should not employ the catheter. The urine should be drawn off before pain or marked discomfort is felt; otherwise congestion of the prostate and bladder resulting in cystitis will be produced.

The patient must be taught how to use the catheter, and he should never be without one—that is to say, if he leaves home on a journey or in the course of his ordinary occupation he should always carry one about with him, for he may find at any time that its employment is imperative. Indeed, the sooner the patient recognises that the primary duty of his life is the employment of his catheter the better. A soft coudée catheter, No. 7 to 9E, whichever passes most easily, is, as a rule, the best for habitual employment. The patient, unless very infirm, passes it standing. There is now no danger of his fainting, for the quantity of urine allowed to accumulate is limited, and during the period of instruction in the use of the catheter that he will have undergone at the hands of the surgeon he will have acquired confidence in its use. The instrument is held perpendicularly whilst its end is introduced into the urethra. It is then gradually depressed into the horizontal position as it glides along the canal, over the obstruction and into the bladder, the curved end being directed upwards towards the roof of the urethra. Sometimes a well-polished vulcanised rubber catheter answers best. A timid patient likes it, as less liable to pain him; but if the prostatic urethra is narrowed from pressure of the lateral lobes it is not so easy to introduce as a more rigid instrument. It has also the disadvantage that its walls being stout the channel is comparatively narrow, so that the urine if at all thick will not flow through it readily. On the other hand, as it can be boiled without injury it is readily rendered aseptic, and as it coils up in a small space it can be carried about very easily. A soft and pliant cylindrical catheter will

FIG. 5.

Bicoudée catheter.

FIG. 6.

Well-curved catheter terminating in a coude.

pass readily and answer best when there is no obstruction caused by the middle lobe. When this lobe is much enlarged a bicoudée catheter (Fig. 5) or a well-curved one terminating in a coude (Fig. 6) may be necessary to overcome the obstruction. Formerly it was customary to keep catheters mounted on a well-curved metal stylet ready for use; they are

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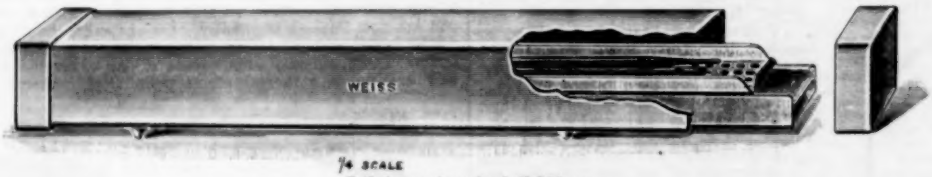
now woven with this curve in their manufacture and retain their shape permanently.

It will be rarely desirable for a patient himself to pass a metal catheter. When circumstances arise requiring its employment the surgeon should be called in. Whatever instrument is employed it must be kept scrupulously clean. The life and comfort of the patient depend not less on the cleanliness of his catheter than on the judicious use of the same. It will not be out of place, therefore, if I here direct your attention to the antiseptic precautions necessary in the employment of urethral instruments in general.

The instruments required for catheterism are of three kinds—metallic, soft rubber, and gum-elastic. The first two are most easily and effectually sterilised by boiling. They should be thoroughly washed and syringed through with soap and warm water and then boiled for 10 minutes, after which they are transferred to boric lotion ready for use. Gum-elastic instruments cannot be boiled without injury. They are best cleansed by washing and syringing them through with soap and warm water and then placing them in a 1 in 40 solution of carbolic acid for 10 minutes, after which they are placed in boric lotion before use. Prolonged application of strong antiseptics renders them rough and useless.

Before introducing an instrument of any kind into the bladder the foreskin and glans should be well washed with soap and water and then swabbed with some weak antiseptic lotion. If there be any discharge from the urethra the anterior part of the canal should be syringed out with warm boric lotion, but otherwise this precaution is unnecessary. Bacteriologists tell us that even the healthy urethra swarms with organisms that cannot be completely got rid of by the most thorough irrigation by antiseptic lotions so that, theoretically speaking, the introduction of an instrument into the bladder ought to be attended frequently by infection of the urine. Clinical experience, however, teaches us that with the simple precautions indicated this may be avoided.

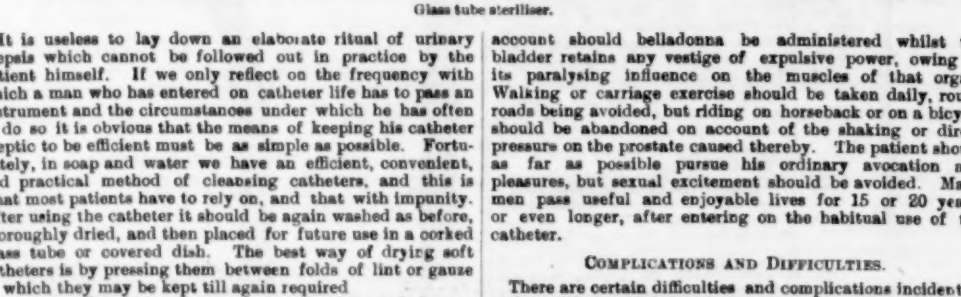
FIG. 7.



¾ SCALE

Catheters on trays in air-tight box.

FIG. 8



Glass tube steriliser.

It is useless to lay down an elaborate ritual of urinary asepsis which cannot be followed out in practice by the patient himself. If we only reflect on the frequency with which a man who has entered on catheter life has to pass an instrument and the circumstances under which he has often to do so it is obvious that the means of keeping his catheter aseptic to be efficient must be as simple as possible. Fortunately, in soap and water we have an efficient, convenient, and practical method of cleansing catheters, and this is what most patients have to rely on, and that with impunity. After using the catheter it should be again washed as before, thoroughly dried, and then placed for future use in a corked glass tube or covered dish. The best way of drying soft catheters is by pressing them between folds of lint or gauze in which they may be kept till again required

The powerful antiseptic properties of trioxymethylene, a white powder obtained by evaporation of formol, have recently been taken advantage of on the continent for sterilising gum-elastic catheters. This powder gives off slowly a vapour which is really formol in its gaseous form. If the catheters be placed quite dry on trays in an air-tight box (Fig. 7) with this powder inclosed between folds of lint they are rendered quite aseptic in 24 hours by the vapour given off. Before use they should be placed in boric lotion, as the formol is slightly irritant to the mucous membrane of the urethra. The catheters can also be sterilised in a glass tube fitted with a cork (Fig. 8) containing the powder, which evaporates through a fine grating on its inner aspect. Some patients of mine speak highly of the convenience of this method of rendering catheters aseptic. As lubricants for instruments fresh olive oil, or castor oil, or vaseline may be used. Carbolic acid should not be added; it irritates the mucous membrane if the proportion used be of any strength, and weak carbolised oil has practically no sterilising effect. Guyon's pomade, composed of equal parts of glycerine, powdered soap, and water, with 1 per cent. of phenol or naphthol, is a clean and efficient lubricant.

The general or hygienic treatment is most important. The diet should be light, simple, and nutritious. Vegetables and fruit, particularly baked or stewed apples, should be taken regularly, but tomatoes, asparagus, and rhubard should be avoided, as they act as irritants to the urinary tract. The less stimulants taken the better. The clothing must be adapted to avoid cold; the patient should be swathed in flannel. Sitting on cold or wet seats should be particularly avoided to guard against congestion of the prostate. The daily warm bath, best taken at bedtime, promotes the action of the skin and relieves local congestion about the prostatic region. The most important part of the general treatment is the regulation of the bowels. If they become at all constipated the urinary symptoms are aggravated. Measures should therefore be taken to induce a soft, but not liquid, motion daily. There is nothing better than confection of sulphur or senna or equal parts of both. Aloin, liquorice powder, and the sulphate of soda are useful, or one of the natural bitter saline waters may be taken in the morning. The enema should always be at hand for use in case the other medicines should fail to induce a daily motion. If pain be present an opiate must be given by the mouth, hypodermically, or as suppository. On no account should belladonna be administered whilst the bladder retains any vestige of expulsive power, owing to its paralysing influence on the muscles of that organ. Walking or carriage exercise should be taken daily, rough roads being avoided, but riding on horseback or on a bicycle should be abandoned on account of the shaking or direct pressure on the prostate caused thereby. The patient should as far as possible pursue his ordinary avocation and pleasures, but sexual excitement should be avoided. Many men pass useful and enjoyable lives for 15 or 20 years, or even longer, after entering on the habitual use of the catheter.

COMPLICATIONS AND DIFFICULTIES.

There are certain difficulties and complications incident to catheter life to which I will now direct your attention. When the surgeon is consulted at a comparatively early stage of the disorder, before the residual urine amounts to more than a few ounces, if careful asepsis be employed in the introduction of instruments the entry on catheter life is effected without any constitutional or local disturbance and matters run smoothly. The patient takes to his new existence,

sadly and perhaps unwillingly at first; but he soon bows to the inevitable and is grateful for the relief that surgical art has given him through the agency of the catheter. If, however—and this is what happens in a large proportion of cases that come under observation—through wrong advice, or that timidity about consulting the surgeon that induces elderly men suffering from urinary troubles to put off what they regard as the evil day as long as possible, the symptoms have existed for a long time, there is difficulty and frequency of micturition with some pain, the urine is turbid, possibly fœtid, the patient looks ill and worn-out, and the hypogastric dulness points to the presence of a considerable quantity of residual urine, the case must be regarded as one of considerable gravity. The employment of the catheter for the first time under these conditions is likely to be attended by constitutional disturbances, sometimes of severe character. The examination of such a case had better not be completed in the consulting-room—that is to say, you should defer drawing off the urine till the patient goes home. The examination should be completed in a warm room so that the patient can go to bed immediately afterwards, where he should remain for two or three days in any case, and for a longer period should constitutional disturbances set in. To relieve the distended bladder and then allow the patient out

FIG. 9.

Bottle fitted with nozzle and stopcock for washing out the bladder

in the cold is injudicious surgery. In hospital practice, when the catheter is employed in a case of this kind in the out-patient department, the man should be at once admitted to bed. If the quantity of residual urine be large only half should be drawn off on first introducing the catheter. The quantity removed should be increased at each subsequent introduction and the bladder not completely emptied for two or three days, during which the patient should be under close observation. If he be too infirm or nervous to pass the catheter himself an experienced nurse should be employed for this purpose.

Urinary fever in connexion with catheterism.—In an advanced case of prostatic disease of this kind the urine, even when clear and acid on the first introduction of the catheter, generally becomes clouded and eventually ammoniacal in the course of a few days, and constitutional symptoms supervene. A rigor will probably occur, or even without this the temperature may rise to 103° or 104° F., profuse perspiration sets in, and, the normal temperature being reached, the fever may not recur. Sometimes more than one attack of this kind occurs, or the fever may be of a continuous character for some days, gradually subsiding; but occasionally the patient sinks into a low typhoid state, with dry, furred tongue, feeble pulse, and great thirst; and if the kidneys are much affected uræmia followed by coma, may set in, resulting in a fatal termination. This fever is variously termed "urinary," "urethral," and "catheter," but its exact cause—whether septic or neurotic—it is impossible with our present knowledge definitely to state. Certainly it occurs under the strictest antiseptic precautions and with the utmost skill in passing the catheter. The general treatment of this fever is similar to that following instrumentation or operation for stricture of the urethra, which has already been described, except that, owing to the advanced age and debility of the patient, it must be more sustaining, stimulants in moderation being allowed. When the urine contains pus the local treatment will be the same as that presently to be described for cystitis.

Cystitis.—Cystitis, as we have already seen, is a common complication of enlarged prostate, so that we must always be prepared to deal with it in its earliest stage. When the urine has a tendency to become cloudy and gives off a fishy, offensive odour the best drug to administer is boric acid, which may be given in 10-grain doses four times daily. A patient of mine, himself a medical man, who for years has been dependent on his catheter, informed me that he found two or three large doses of 25 grains each more effectual in bringing the urine back to its normal condition than repeated small doses; and I have since then frequently verified this experience in practice. If the urine becomes decidedly alkaline the boric acid should be combined with the benzoate of ammonia in 10-grain doses.

When pus forms the bladder must be washed out once or twice daily with disinfectants or astringent lotions. A four-ounce indiarubber bottle fitted with nozzle and stop-cock (Fig. 9) is the most convenient apparatus to employ for the purpose. It should be completely filled with the lotion so as to avoid the introduction of air into the bladder. Not more than between two and three ounces should be thrown into the bladder at one time, though it may be necessary to repeat this process several times before the fluid returns unaltered. If, however, the cystitis be severe not more than half an ounce should be introduced, as the bladder walls are under such circumstances extremely intolerant of tension. All lotions should be used warmed to 100° F. For cleansing the bladder the most simple and useful injections are a 1 per cent. solution of boric acid or a teaspoonful of boro-glycerine to four ounces of water. Permanganate of potash solution, commencing with 1 in 5000 and gradually increasing it to 1 in 1000, and perchloride of mercury, 1 in 10,000, make excellent injections. But our sheet-anchor in such cases is nitrate of silver. Commence with a very weak solution, 1 in 4000, gradually increasing the strength to 1 in 750. It is rarely that the bladder will tolerate a stronger solution. I have found solution of resorcin, from 3 to 5 per cent., an excellent injection.

When there is great pain and scalding at the neck of the bladder from local cystitis there is nothing to equal daily "installations" of a strong solution of nitrate of silver. The urine is first drawn off and the bladder is washed out

FIG. 10.

Olivary-tipped Guyon syringe.

with boric lotion. The olivary tip of a Guyon's catheter-syringe (Fig. 10) is then passed just through the membranous portion of the urethra and a drachm of the solution, gradually increased from 1 to 3 per cent., is slowly injected. This trickles back into the bladder and is allowed to remain there.

Complete retention of urine.—This is liable to occur suddenly at any time in connexion with enlarged prostate through congestion and swelling of that organ closing up the already narrowed passage. This congestion may be due to cold, sitting on a wet seat, errors in eating and drinking, sexual excesses, an attack of gout, or injury of the prostate by the catheter. Immediate relief of this retention is imperative—by means of the catheter if possible; otherwise by operative interference. It will be inadvisable to waste time by having recourse to hot baths and opium, as in the case of retention from stricture, for the patient being old and the muscular power of the bladder already impaired any delay may culminate in complete and permanent atony of the bladder from over-stretching of its muscles. To relieve the retention catheters of various kinds are employed. First a vulcanised indiarubber catheter should be used. It is astonishing how retention may occur and still little or no resistance be offered to the entrance of a soft instrument of this kind. If this fail a coudée catheter and a well-curved one terminating in a coude (Fig. 6) should be tried in succession. If still unsuccessful a well-curved cylindrical gum-catheter without a stylet should be employed. This instrument may be given any curve at pleasure by dipping it in hot water, bending it into the necessary shape, and plunging it into cold water, when it retains its new form. If we fail with this we employ the same catheter mounted on a stylet. As soon as the end of the instrument reaches the obstruction the stylet is partly withdrawn—a manœuvre which has the effect of causing the end of the catheter to project upwards and forwards, thus frequently entering the bladder. Finally, it may be necessary to employ an ordinary silver catheter or one with a longer curve. The utmost gentleness should be used, force of any kind being avoided, lest a false passage be made or hæmorrhage caused by injury to the prostate. When the middle lobe is the cause of the obstruction and the end of the metal catheter fails to ride over it the point should be directed right or left with a view to hitting off the channel that exists on either side of its neck. If there be much difficulty in introducing a flexible catheter it should be tied in for two or three days, but a metal instrument should, as a rule, be withdrawn. If we fail to introduce any kind of catheter temporary relief may be given by suprapubic aspiration, after which in the course of a few hours a catheter may pass in readily; should this fail it will be necessary to tap the bladder suprapubically by a trocar and cannula and drain it for a time.

If the retention occurs in an early stage of the enlargement, whilst the expulsive power of the bladder is still unimpaired, it is possible that after the use of the catheter for a few days the bladder may return to its normal state and habitual catheterism be unnecessary. But when the disease is far advanced and the retention has existed for some time it is rare for the bladder to regain its contractile power, even partially.

An attack of retention is almost invariably followed by constitutional symptoms, so that the patient will have to remain in bed for several days and the treatment generally will be the same as that already indicated when habitual catheterism is entered upon.

The pre-prostatic pouch.—In cases of enlarged prostate of long standing we may find that before the bladder is fairly entered a pre-prostatic pouch is encountered—that is, a pouch lying in front of the middle lobe and bounded on either side by the lateral lobes of the prostate, and which may permit the beak of a sound to rotate freely within it. I have not observed any reference to this pouch in the text-books, but its existence is of great importance. I have frequently known it to be mistaken for the true bladder cavity. Composed of the dilated prostatic urethra and that portion of the bladder cavity lying in front of the enlarged middle lobe, it, as a rule, contains urine which is drawn off by the catheter, thus giving rise to the impression that the main cavity of the bladder has been entered. Quite recently I was called in consultation to see a case of this kind in which the medical attendant could only draw off about half an ounce of urine each time he introduced the catheter, but without relief to the patient, though the medical attendant felt sure that the bladder was entered. There was great distention of the bladder, felt above the pubes, which was attributed to blood-clot, as the patient was subject to periodic attacks of hæmorrhage. By means of a well-curved coudée catheter I was enabled to effect an entrance to the main cavity of the bladder and to draw off three pints of blood-stained urine, but in doing so I recognised a large pre-prostatic pouch from which the urine had previously been drawn.

A stone may form in this position; I have removed several such calculi, generally by litholapaxy, the cavity being sufficiently large to permit me to work a child's lithotrite in it. I have also known calculi lying in the main cavity of the bladder missed through the surgeon mistaking this pouch for the bladder proper.

Hæmorrhage from the prostate.—Hæmorrhage rarely occurs in the early stages of enlargement of the prostate; but when the disorder is well advanced this is always liable to take place from various causes. The bleeding may arise from the mucous membrane of the bladder or from the prostate. During the early days after entry on the habitual use of the catheter it is liable to occur from the former source, when there is much distension from residual urine previously, due to rupture of the vessels from their being deprived of their accustomed support. As a rule the hæmorrhage is trifling, merely discolouring the urine, without the presence of clots, and requires no particular treatment, the symptoms gradually passing off. Then there may be hæmorrhage as the result of congestion of the prostate after exercise or exposure to wet and cold. This is seldom severe and also passes off with rest. In advanced stages of the disorder there is frequently a varicose condition of the veins on the surface of the prostate, and some hæmorrhage may occur from rupture of these. The bleeding may be so profuse as to distend the bladder. On three occasions I have had to open the bladder suprapubically to turn out an enormous clot filling its cavity. But the most frequent cause of hæmorrhage is injury of the prostate by careless or unskilful use of the catheter or from difficulty in passing the instrument. As a rule, the blood is mixed with the urine; but if the injury be in the prostatic urethra or on the anterior surface of an enlarged middle lobe almost blocking the orifice the blood may flow away quite pure from the urethra.

The treatment consists in perfect rest in bed and the administration of opium. The usual styptic drugs are of little or no avail. The blood-clots may be allowed to dissolve and come away with the urine. Washing them out through a full-sized catheter with a large eye may be tried, but care should be taken that this does not induce further hæmorrhage. When, owing to difficulty in passing the catheter, bleeding occurs on each introduction it is better to tie in a good-sized coudée for a few days. If it gets clogged with clot this may be displaced by gently injecting a little boric lotion from an indiarubber bottle.

Frequent hæmorrhage attended by much pain after exercise in prostatic patients should always give rise to the suspicion of the presence of stone. If a calculus lie in a saccule projecting out from the base of the bladder there may be intense agony during defecation if constipation exist, and the urine will generally be blood-stained afterwards. I have met with two cases of this kind in practice—one in which the symptoms were completely relieved after the stone was removed suprapubically, and the cause of the other was discovered after death. Orchitis is not uncommon in connexion with enlarged prostate, as a result of catheterism or independently of this; and excessive tenderness of one or both testicles is sometimes found, quite apart from any inflammatory state of the organs. Urethritis and balanitis may occur, particularly in patients suffering from diabetes.

OPERATIVE TREATMENT OF ENLARGED PROSTATE.

I shall now direct your attention to the various recognised surgical procedures employed for the disorder under consideration, which may briefly be classified as follows: 1. Radical operations, which aim at removing the obstructing portion of the glands. 2. Operations undertaken for the purpose of inducing atrophy of the prostate—(*a*) castration; and (*b*) excision of the vasa deferentia. 3. Palliative operations—(*a*) drainage of the bladder through the perineum; and (*b*) drainage of the bladder above the pubes.

Radical operations.—Numerous procedures have from time

to time been devised for the removal of the obstructing portion of the enlarged gland. Many of these are obsolete and have merely a historic interest. I shall only refer to the most important operations—those that are of practical value.

1. Division of the prostatic obstruction by the galvano-cautery. Bottini was the originator, as he has been the warmest advocate, of this method. An electrode shaped like a Mercier's sound is introduced into the bladder through the urethra. The beak is turned round and the instrument is withdrawn till it impinges against the obstruction. The current is then turned on and the obstructing portion of tissue is burnt through. This procedure has not been at all extensively employed and at the present time it has few advocates. It is applicable only to a very limited proportion of cases in which the obstruction is confined to the middle lobe, or the bar of hypertrophied tissue extending across the floor of the orifice of the urethra, or the adjacent portion of the trigone. But the chief objection to its employment lies in the fact that the operation is done in the dark, thus rendering it impossible to gauge accurately the extent of destruction done by the cautery. Wishart and Watson employed the galvano-cautery for the same purpose as Bottini, through a perineal opening into the urethra at the apex of the prostate.

2. Removal of a median growth through a perineal opening into the urethra by means of forceps or instruments constructed to punch out a portion of the growth. This also is an operation with a very limited range of application. I have from time to time employed this method in suitable cases, and have on two or three occasions removed a pedunculated prostatic outgrowth, either accidentally or by design, when performing perineal lithotomy.

3. Suprapubic prostatectomy. Though this operation had previously been performed by several surgeons it is to McGill, who brought it prominently before the profession in this country in 1888 with a series of cases, that it owes its present position. The varieties of prostatic enlargement for which this operation is suitable are (1) enlargements of the middle lobe, whether sessile or pedunculated, projecting into the cavity of the bladder, or forming a bar across the floor of the inner orifice of the urethra; (2) enlargements of one or both lateral lobes, forming prominent tumours in the bladder; and (3) hypertrophied prostatic tissue forming a ring or collar around the inner orifice of the urethra and partially closing it up. The preliminary stage of this operation—viz., the cystotomy—is identical with that for the removal of vesical stone or tumour by the suprapubic method. The employment of the rectal bag is a matter of taste. Personally I have almost completely discarded it as cumbersome and unnecessary, though I habitually used it for some years after its introduction by Petersen. As soon as the bladder is opened the forefinger of the left hand is introduced and a general survey of its cavity is made. By this means the position, shape, size, and general character of the prostatic outgrowth are ascertained. If the middle lobe be pedunculated it can be removed either by clipping the pedicle through, flush with the trigone, by means of scissors curved on the flat, or by twisting it off by the aid of forceps. A sessile middle lobe is removed by notching the mucous membrane and submucous tissues on either side of the growth, which is then twisted off by forceps. A prostatic bar or lower portion of hypertrophied collar is similarly removed or cut away by means of Jessop's forceps. A prominent lateral lobe is first grasped by strong catch forceps to render it steady. The mucous membrane at the most projecting part is then snipped by scissors. The opening thus made is enlarged by the finger-nail and the tip of the finger is introduced. The tumour is enucleated by slowly and carefully separating it from the surrounding tissues. Indeed, in the removal of prostatic enlargements suprapubically the scissors should as a rule be merely employed to snip the mucous membrane, the enucleation being accomplished by the finger-point. In this manner hæmorrhage is reduced to a minimum. Prostatic outgrowths prominently projecting into the bladder consist, as a rule, of more or less distinctly encapsuled tumours covered by the mucous membrane. The hypertrophied collar sometimes assumes a nodulated or beaded aspect, and if the mucous membrane covering it be snipped with scissors these small tumours can be enucleated by the finger-nail. As a rule the hæmorrhage is not severe and can be controlled by irrigation with hot boric lotion. If at all profuse the thermo-cautery should be applied to the bleeding points through a speculum, or the tincture of the perchloride of iron on a sponge. The finger of an assistant placed in the rectum will be of great aid, thus rendering the tumour in the bladder steady and more prominent. Sometimes the enucleation can be best effected by the surgeon introducing one or two fingers of his right hand into the rectum, whilst the finger of the left hand is in the bladder. The drainage of the bladder and after-treatment are the same as after suprapubic cystotomy for stone or tumour.

This is undoubtedly the most valuable of the radical procedures employed for the removal of prostatic outgrowths—that which is most commonly applicable, most easily accomplished, and most thorough in its results. I have performed this operation on several occasions and with considerable success. In one instance I removed both lateral lobes projecting into the bladder, each of the size and shape of half a large pear, the whole weighing three ounces. In another there were distinct encapsuled tumours corresponding to the three lobes, weighing two ounces, which were enucleated quite readily. Both these operations were thoroughly successful, the patients getting complete control over micturition, which was unattended by any symptoms.

Unfortunately, in a few of my cases the bladder did not regain any of its expulsive power even after the obstruction was thoroughly removed, owing to the existence of complete atony of the muscles of the bladder from prolonged obstruction or general sclerosis of the bladder walls. The removal of the growths was, however, followed by subsidence of the most urgent symptoms and rendered the introduction of the catheter easy.

4. Perineal prostatectomy by Dittel's method. This operation consists in removing a wedge-shaped portion from the under surface of one or both lateral lobes with a view to relieve the pressure on the urethra. This is accomplished through an incision extending from the median raphe round the sphincter ani to the tip of the coccyx. The ischio-rectal fossa is opened up and by dissection the rectum is separated from the prostate, which is exposed and a wedge-shaped portion is removed from it. By extending the dissection in front a little beyond the middle line the other lobe of the prostate can be exposed and similarly dealt with. An essential feature is that the bladder and urethra be left intact. This operation does not appear to have been performed in many instances and the records of cases are not very encouraging, fistulæ remaining in some of them owing to the urethra or bladder having been opened during the procedure and imperfect results being obtained in others.

5. Nicoll has modified this operation by performing a preliminary suprapubic cystotomy. This is done for the purpose of introducing a finger into the bladder with a view to pushing the prostatic tumour into the perineal wound, thus facilitating its removal, and at the same time obviating the opening of the mucous membrane of the bladder or urethra.

6. In a communication to the Medical Society of London made in March, 1900, I described, by means of an illustrative case, a new method of performing perineal prostatectomy in which advantage is taken of Dittel's perineal incision; but Nicoll's objects are attained by a much less serious proceeding than suprapubic cystotomy—viz., by a preliminary perineal opening into the urethra.

A gentleman, aged 59, sent by Dr. Richard Heath, of St. Leonards-on-Sea, consulted me on October 11th, 1899, suffering from the following symptoms: increased frequency of micturition, averaging about ten or eleven times by day and seven or eight times by night; difficulty in starting the stream, necessitating much straining to effect this; he finds that when he places his hand on the hypogastric region and pushes the abdomen upwards the stream starts more readily. Diminished force of the stream. Dribbling at the end of micturition. Sometimes the stream is intermittent. The urine is clear, as a rule; some eight months ago it was very dark in colour, but patient cannot say if it contained blood. Pain and discomfort behind the glans during micturition, and discomfort above the pubes before the act. The symptoms have existed three years and have been gradually growing worse. At first they were more troublesome at night, but latterly they have been as bad in the daytime. They are increased by exercise, particularly in walking. I sounded the patient, but could find no stone. There was some difficulty in passing the instrument over the enlarged prostate. Residual urine four and a half ounces; trace of albumin. Per rectum there was a tumour felt in the right side of the prostate, twice the size of a walnut, very dense throughout, with a nodule of intense hardness, which was very painful on pressure. This nodule felt like a stone embedded in the prostate. The left lobe of the prostate was scarcely enlarged and quite soft. On the 17th I made a cystoscopic examination, the patient being anæsthetised by Dr. Dudley Buxton, and Mr. Victor Horsley being present in consultation. The right lobe of the prostate was seen to be enlarged and projecting into the bladder, the size of a walnut, irregularly nodulated, and of a dark-brown colour. The left lobe was not visible in the bladder, which, generally, presented a healthy appearance,

except that the mucous membrane was trabeculated, the result of constant straining and backward pressure of urine. After consultation exploration of the bladder by a perineal urethrotomy was decided on, and this was carried out next day. The urethra was opened in front of the prostate on a staff. On passing my finger through the opening I found a round, prominent mass, involving the right lobe of the prostate, projecting into the bladder, but no stone could be detected. On inserting the forefinger of my other hand into the rectum the hard nodule was felt as before and the tumour clearly defined, rounded, and intensely hard, the left lobe of the prostate being almost normal. After consultation with Mr. Horsley we determined to remove the tumour perineally. A crescentic incision about four inches long was made from the median raphe at the lower end of the urethral wound backwards round the anus to the coccyx on the right side. The dissection was carried deep into the ischio-rectal fossa, the rectum being drawn inwards by a broad retractor. The left forefinger was passed through the urethral wound into the bladder and hooked round the tumour, which was pressed out into the wound, and thus came well into view. The capsule of the prostate was incised and peeled off by means of an elevator. The tumour, which involved the whole of the right lobe of the prostate, was thus removed piecemeal by cutting forceps and curved scissors, only a thin layer being left to support the mucous membrane of the bladder and prostatic urethra, which was left intact. There was very little bleeding, and this was controlled by forcipressure, no vessels being ligatured. On completion of the operation a soft-rubber perineal tube was passed through the urethral opening into the bladder and retained there by a suture, and on this a rubber drainage-tube was fixed to convey the urine to a vessel beneath the bed. The large gaping wound in the ischio-rectal fossa was packed with iodoform gauze and the usual dressings applied. The perineal tube was kept in for six days, during which time the whole of the urine passed through it, not a drop escaping beside the tube, thus obviating any chance of infection of the deep ischio-rectal wound till it had partly filled up and was covered by healthy granulations. The temperature rose to 100° F. one night, after which it did not go above 99° F. After a fortnight the urine began to pass partly through the urethra, and after a few days later no urine passed by the perineal wound in the urethra. The patient was sitting up on Dec. 1st. On the 18th he left the surgical home untroubled by any urinary symptom, and he is now quite well. The tumour turned out to be of the fibro-adenomatous type, frequently met with in the prostates of the aged, the fibrous elements predominating. It was as hard as scirrhus. About its centre a few drops of pus were found in the middle of a small coagulum, due to a thrombus or irritation of a small prostatic concretion found in this vicinity.

The advantages claimed for this method of operating are:—1. The preliminary external urethrotomy permits of the introduction of the finger into the bladder which, with the finger in the rectum, enables the surgeon to define accurately the shape, density, size, and extent of the prostatic growth in a manner that cannot otherwise be accomplished, except, perhaps, by a suprapubic opening—a much more serious proceeding. 2. The finger can be hooked over the enlarged lateral lobe and the latter pushed well into the ischio-rectal wound, thus to a large extent obviating a deep and dangerous dissection, as in Dittel's operation. 3. With the tumour pushed well into the wound the capsule is easily incised and erased, and the cutting forceps and scissors easily and freely applied to eradicate the whole mass. 4. The finger in the bladder enables the surgeon to feel when the cutting instruments are approaching that viscus, so that he can remove the whole growth, except a thin layer for the support of the mucous membrane of the bladder and prostatic urethra, without opening the latter, thus avoiding infection of the wound and the existence of a permanent fistula. 5. The stout perineal drainage-tube inserted into the urethral wound carries off all the urine and prevents the perineal wound from becoming septic. The drawback to the operation is that, like all other operations proposed for the removal of prostatic growths, it is applicable only to certain forms of the disease. It is not, of course, applicable to cases of enlarged middle lobe projecting into the cavity of the bladder. For such cases McGill's operation is undoubtedly the best. In very fat patients, or when the prostatic tumour is extremely large, it may not be feasible, owing to the fact that the finger may not in such cases be sufficiently long to hook it round the growth.

Operations undertaken for the purpose of inducing atrophy of the prostate.—1. Castration. The apparent analogy between prostatic overgrowths and uterine fibro myomata induced Professor J. W. White of Philadelphia to suggest in 1893 that castration might have the same effect in the former disease that removal of the ovaries has in the latter. It has been demonstrated beyond question that castration in young dogs and other animals prevents development of the prostate, and that in fully-grown animals this operation is almost invariably followed by atrophy of the healthy organ. The same is true of the human male. In addition to the conclusive observations on this point on record I may add that it fell to my lot at one period in India, in the course of my official duties, to examine a large number of eunuchs for medico-legal purposes. Some of these eunuchs had been castrated in infancy; others had voluntarily undergone emasculation through religious fanaticism in early adult life. In one and all of them the prostate was found to be rudimentary.

Castration has now been performed in a considerable number of cases of prostatic enlargement. Unfortunately, the details in a large proportion of the published cases are given in such an imperfect manner that no logical conclusion can be drawn therefrom. There is, however, a sufficiently large number of carefully recorded cases to show that, without accepting the somewhat optimistic views as to results enunciated by Professor White, in a large proportion of patients the subjects of prostatic enlargement that survive the operation castration is followed by shrinkage and atrophy of the gland, with corresponding amelioration in the symptoms, as indicated by diminution in the frequency of micturition; by relief from the burning pain frequently felt at the neck of the bladder; by abatement of the attendant cystitis; by improvement in the character of the urine; by reduction in the quantity of residual urine; by partial or complete return of voluntary micturition; more easy introduction of the catheter; and by general improvement in the patient's health. The atrophy of the enlarged prostate is demonstrable by rectal examination and by the length of the urethra as indicated by the distance the catheter has to be introduced before urine begins to flow.

One of the most remarkable effects of castration is the decided improvement in the symptoms that sets in in many cases a few hours after the operation, particularly in the diminution of pain and in the spontaneous passage of urine when all expulsive power had previously been lost. This is obviously not due to atrophy, for the process of wasting requires time—some weeks in fact—before it displays itself to any marked degree. It must be remembered, however, that the glandular overgrowth is not the only factor, as a rule, contributing to the bulky prostate when the patient comes under observation. There is tumefaction of the organ from congestion and chronic inflammation at the neck of the bladder, and it is to this latter condition that some of the most urgent symptoms are frequently due. Castration has the effect of relieving these urgent symptoms rapidly by diminishing the congestion, thus causing immediate shrinkage of the prostate. How it does so is still a matter of conjecture. Professor White holds that "the removal of the testicles removes this congestion by abolishing the source of the stimulus that excites the function of the prostate." Sometimes the immediate improvement in the symptoms continues and becomes more marked later. At others the immediate benefit disappears after a few days, and marked improvement only sets in after two or three weeks when the atrophy of the gland begins to make progress. In a considerable proportion of cases castration has no effect in inducing atrophy of the enlarged prostate or in ameliorating the symptoms. I believe it will be found that these are mainly cases in which the prostatic overgrowth has assumed the form of fibroid degeneration.

The most serious drawback to castration for enlarged prostate is the high mortality—a mortality of at least 20 per cent.—by which the operation is attended, owing to the advanced age and, in a large proportion of cases, the broken constitutions of the patients. Mental disturbances, sometimes amounting to mania, occasionally follow this operation. These may be of a temporary character, or mania may permanently remain, the patient as a rule succumbing at an early date. It must, however, be remembered that patients with advanced prostatic disease are frequently mentally weak, and that operations of any kind connected with the hypertrophied gland are liable to be followed by insanity. The part played by the anæsthetic in such cases must not be lost sight of. In two cases of mine in which mania supervened on perineal drainage of the bladder for prostatic obstruction I felt inclined to attribute this to the anæsthetic.

Besides these considerations there is the strong sentimental objection on the part of patients to lose their testicles, even when these organs are no longer of any physiological use. Castration is, indeed, an operation which the surgeon naturally shrinks from suggesting in the early stages of the prostatic disorder or even whilst the patient is enabled by means of the catheter to lead a fairly comfortable and active life. Nor is it likely that the patient would at all readily fall in with such suggestion. No man will consent to have his testicles removed for the purpose of preventing future prostatic troubles whilst anything remains of their physiological function; and even when all virile power is lost patients shrink from emasculation through the consciousness of being thereby unsexed. This may be regarded as false sentiment, seeing that the organs are no longer of any use. Call it what you like, it is only human and has to be reckoned with in practice. A man will only consent as a rule to have his testes removed when less drastic measures have failed and he is driven to it by the agony attendant on the final stages of the disease. When that period is reached castration is in itself an operation attended by a heavy mortality.

These are the considerations that have prevented this

operation from being at all freely resorted to and which have in the last few years induced surgeons to have recourse to vasectomy, which, if not quite so effectual in its results as castration, is practically unattended by danger to life and free from those sentimental objections incident to this latter operation.

2. Vasectomy. This operation consists in division or excision of a portion of the vas deferens. General anæsthesia is, as a rule, advisable; but the operation may be performed with the aid of local anæsthesia, such as the subcutaneous injection of cocaine. The parts having been shaved and rendered aseptic the vas is searched for in the upper part of the scrotum. It is then firmly grasped between the finger and thumb of the left hand and brought as close to the surface as possible. An incision an inch long is made directly over and along the course of the cord, and the dissection is carried down to the vas, which is recognised by its white, glistening appearance. The vas is then grasped by toothed catch forceps, a blunt hook is passed beneath it, and a loop is withdrawn through the wound after separating it from the enveloping fascia. A ligature may be tied round the loop, which is cut off, or separate ligatures may be applied an inch or more apart and the intervening portion may be cut away. The skin wound is closed by one or two sutures. The vas on the other side is similarly dealt with, either at once or after an interval of a few days. This latter course is safer and less liable to be followed by mental disturbances.

FIG. 11.

Annandale's drainage apparatus.

I have now performed this operation in a considerable number of cases without any mortality. Indeed, I cannot imagine death resulting from such a comparatively simple operation alone. In none of my cases have I noticed any marked atrophy of the testicles, though in a few instances these organs diminished in size and grew softer. There has been no interference with the sexual power when such remained at the time of the operation beyond the fact, of course, that there was no discharge of semen. In a large proportion of cases there has been decided benefit from the operation, both immediate and remote, similar to those already described as resulting from castration. The atrophy of the prostate progresses much more slowly than after castration and I do not think that it is ever so complete. In a very considerable proportion of the cases there was no permanent benefit from this operation, though, as a rule, there was temporary subsidence of the more urgent symptoms, due, no doubt, to the influence of the operation in allaying the congestion of the prostate. It is probable that the rest in bed, systematic catheterism, and general regime following the operation had considerable influence in ameliorating the condition of the patients.

FIG. 12.

Thompson's drainage apparatus.

Vasectomy effectually prevents the recurrent epididymitis and orchitis which are such painful and distressing complications in prostatic patients. This happy result would alone entitle this operation to an important place in surgery. My experience of vasectomy is that it is useless for the purpose of inducing atrophy of the prostate when that organ has assumed the form of fibroid degeneration as recognised by its hard consistence and nodular form by the rectum. It is in those cases in which the enlargement is mainly or solely of the adenomatous type, the gland being felt generally hypertrophied and soft per rectum, that we may expect permanent results from this operation.

I have never seen a single instance in which, after either castration or vasectomy, voluntary micturition was permanently restored when atony of the bladder had advanced to such a degree that the patient was entirely dependent on his catheter. Vasectomy is neither so rapid in its results nor so radical a cure as castration. As, however, vasectomy does not interfere with the sexual power and does not involve emasculation patients consent to its performance at an early stage of the prostatic disease, when it has the best prospect of success, before the degeneration assumes a fibroid character, or irreparable damage is done to the muscles of the bladder.

Palliative operations.—When in the advanced stages of prostatic enlargement the capacity of the bladder is much diminished in size, all expulsive power is lost, and severe cystitis exists, it may be necessary to draw off the urine by the catheter every hour, or even more frequently, and when, in addition, there are difficulty, pain, and possibly hæmorrhage in the introduction of the instrument, the condition of the patient is indeed a pitiable one. If something further be not done to relieve his condition he rapidly gets worn out from the severe pain and loss of sleep incident to the constantly-repeated catheterisation. Under such circumstances the bladder must be drained, temporarily or permanently as the case may require, through an opening made either in the perineum or above the pubes, thus obviating the introduction of the catheter and giving the bladder complete rest. The method of draining the bladder by the perineum was described in a previous lecture in connexion with stricture of the urethra. Should it be considered advisable to establish permanent drainage by this route this can best be affected by the apparatus designed by Annandale for this purpose (Fig. 11).

To effect drainage of the bladder above the pubes the operation is the same as suprapubic cystotomy for stone. Drainage by this route may be permanently carried out by an apparatus devised by Thompson (Fig. 12), by which a soft rubber catheter is retained in the fistulous opening by means of a silver plate held in position by a belt round the waist and a perineal band. The other end of the catheter passes into a rubber urinal strapped on to the leg.

The considerations that must guide us in our choice between these two operations may be stated thus. The perineal is a much less serious operation than the suprapubic. When, therefore, drainage alone is required and this is to be of a temporary character, and particularly if the patient be very feeble, the former operation should be selected. But if the drainage is to be permanent, if there be suspicion of the presence of calculus, or when, from previous observation by the cystoscope or otherwise, it is known or suspected that an outgrowth of the prostate causing or accentuating the obstruction exists, which is

capable of being removed, suprapubic cystotomy should be employed. By this procedure the bladder at the same time that it is drained can be thoroughly explored and a stone or prostatic outgrowth can be removed. Thick, dense flakes of muco-pus and phosphatic grit, which in cases of this kind frequently adhere to the walls of the bladder, can be scraped off by the finger-nail or scoop and removed by irrigation.

A Clinical Lecture

ON

SOME CASES OF HEAD-INJURY, INCLUDING ONE IN WHICH THERE WAS LESION OF THE OCCIPITAL LOBE.

Delivered at St. Mary's Hospital on Nov. 27th, 1900,

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GENTLEMEN,—I hope that you never lose the opportunity of seeing and taking note of the cases of head-injury admitted to this hospital. All of them are likely to be of interest, and many of them will surely present difficult problems for solution. They will provide, moreover, a suitable field for cultivating the faculty of accurate observation, and they will show you how essential is this cultivated faculty for the detection of those minute departures from the normal upon which alone you may have to depend for diagnosis.

There may be comparatively little difficulty in diagnosis or decision as to treatment when you have to do with a scalp wound or a visible fracture beneath it, but when there has been no obvious injury to the scalp or the skull, and the lesion is of parts within the closed cavity of the cranium then begin your difficulties, and the faintest clue must not escape your observation. What are the sorts of things for which you have, then, to look? A hæmatoma in the occipital region, bleeding, or escape of cerebro-spinal fluid from the ear, bleeding from the mouth or nose, subconjunctival hæmorrhage, vomiting of blood, signs of paralysis, however trifling, in the face or limbs, inequality in the pupils, changes in the character of the unconsciousness, convulsive seizures—their nature and duration—any one of these may help you to a solution of the case and enable you to answer the question which the surgeon must always put to himself in cases of head injury, Is there, or is there not, the necessity for operation? From the patient himself small help is to be gained, for in all probability he lies unconscious before you, and you cannot avail yourselves of the Roentgen rays to make a cut-and-dry diagnosis. You have to rely upon your own observation and you will have to bring to bear upon the observations which you make no small amount of thought for their interpretation. Moreover, if you watch these cases without ceasing you will sometimes have the chance of hearing the surgeon think aloud at the bedside, and maybe you will be present at a conference between physician and surgeon when arguments are adduced in favour of, or against, this or that view of the history and the facts observed. A case of this kind was before us only a few days ago. A man, 47 years of age, was brought to the hospital with a letter from the medical man who had been attending him and who wrote that the patient had been suffering from concussion of the brain and that there were now indications of cerebral irritation which led him to think that trephining should be resorted to at the seat of lesion. I am not particularly fond of ready-made diagnoses—they have a tendency to hamper your own judgment; but in this case, perhaps, the diagnosis of another practitioner made us only more careful in our own examination. Well, we failed to find either in the scalp or the cranium any indication of a lesion and it was soon obvious that we had before us something out of the common. The man was not unconscious, he heard and evidently was interested in all that we said, but all that he himself could utter was the word "yes" and, with much greater effort and difficulty, the word "no." We thought we saw some indications of right facial paralysis, but we found no difference in the limbs. Gouty tophi, moreover, were prominent on his ears, his radial artery was tortuous and hard, and the provisional opinion was entertained that the man's condition was not the result of a fall but that some intra-cerebral lesion, either hæmorrhage or thrombosis, was the cause of his supposed accident. We drew off his urine to test for albumin and found it free, the man all the while observing our actions but being unable to speak. We determined to watch him carefully and to take especial note of the convulsive seizures which we were told he had been having for the last three days. There was no change in his condition during the night, and accordingly on the next morning I asked Dr. D. B. Lees to see him with me. He examined him most thoroughly, discovered unquestionable paralysis of the right limbs as well as of the face, and came to the same conclusion as ourselves. At the same time we had the advantage of seeing the patient's wife, from whom we learned that the man had for some months been suffering from gout and had only recently resumed work, and that exactly a week ago he had gone to his work in the evening and within a few minutes was found lying on his back unconscious a few yards from his own door. The unconsciousness was not of long duration and his mental state improved, but he was unable to say more than "yes," and three days before he had begun to have convulsive seizures which had been frequently repeated and in which one-sided phenomena had not been noticed. Dr. Lees agreed with me in thinking that there was no call for an operation and the man has been transferred to his care. This, however, is not the case which I had chosen as the subject of this lecture, and I only refer to it incidentally as one under very recent observation and as providing an example of the sorts of problems which may at any moment be presented to you for solution. The cases to which I now wish to direct your attention have points of interest of their own of a wholly different character from that which we have just considered.

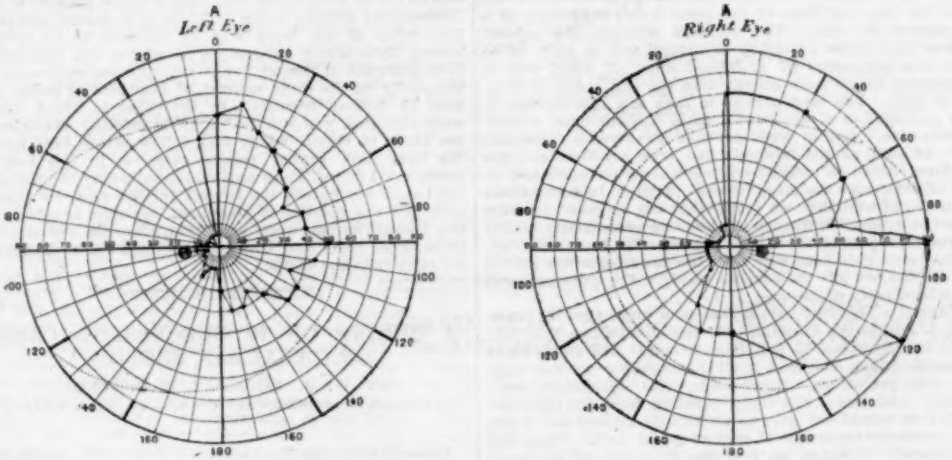
CASE 1.—The first case is that of a lad, 15 years of age, who was admitted on July 6th, 1900. He was travelling on the Underground Railway with his back against the carriage door, and with fatalistic precision a large metal advertisement hoarding fell and struck him on the back of the head. He was brought here in a state of unconsciousness from which he soon rallied, and a lacerated wound of the scalp two and a half inches long was found running along the line of the right lambdoid suture but not reaching quite to the middle line. Brain substance was protruding from the wound. He was said to have been sick several times and to have had a general twitching of the whole body which in the notes is described as being "like shivering." I had him moved at once to the theatre, enlarged the wound, and removed four fragments of bone, two of the sizes of sixpence and a shilling from the outer, and two of three times the size and of irregular outline from the inner table of the skull. These had been driven deeply into the brain substance, from which were extracted pieces of mortar also. The contused and lacerated portions of brain were likewise removed, one suture was passed through the wound in the dura mater, and the scalp wound was brought together with sutures except at one corner which was left open for drainage. The boy was sent back to bed with small hope, I thought, of recovery, but thanks to antisepsis he did as well as possible, and in a few days everything about the wound was perfectly quiet and soundly healed. Mentally he was bright and well. The optic discs were normal.

The case, however, had further points of great interest. There had been an injury to the occipital lobe and I thought it would be well to investigate carefully with the perimeter the range of the fields of vision. Some few years ago[1] we had a case of occipital injury in a small child and the belief of everyone who saw her was that, for a time at any rate, the child was blind. The child was too young, however, for special examination, and we had to be content with our belief alone. Here, however, we had a boy, 15 years of age, in whom we hoped that accurate observations might be possible as to the fields of vision, and this Mr. A. G. Wilson very kindly undertook for me. This is not the occasion, nor have I the knowledge adequate, to discuss the

[1] Transactions of the Ophthalmological Society of the United Kingdom, vol. xii.

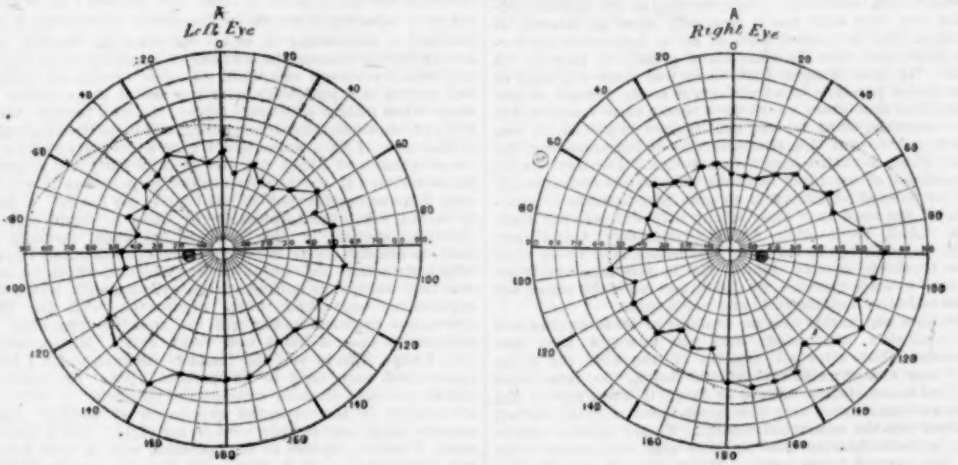
relationship between vision and the occipital lobes. It will suffice if I read to you a short passage from Swanzy's Monograph on "Eye Diseases and Eye Symptoms in their relation to Organic Diseases of the Brain and Spinal Cord." "While the question," he says, "whether the cortical centre for vision is confined to a part of the calcarine fissure or occupies a more extensive region of the mesial surface of the brain is one of eminent interest, it is, for practical purposes, sufficient to know that this centre is round about the cuneus and the calcarine fissure, that it does not occupy the whole of the occipital lobe, and that it is not on the outer surface of the brain. The most important symptom

FIG. 1.



Perimeter charts. July 9th, 1900.

FIG. 2.



Perimeter charts. Nov. 27th 1900.

caused by a destructive lesion of the whole of the cortical visual centre in one hemisphere is complete and absolute loss of function in the corresponding side of each retina and consequently complete and absolute homonymous hemianopsia of the opposite side of each field of vision." I pass Mr. Wilson's perimeter charts round (see Figs. 1 and 2). They speak for themselves and they show that there is blindness in the left side of both fields, implying a loss of function in the right half of each retina. The first one is dated July 9th (three days after the accident), and in succeeding charts of the 14th, the 23rd, and the 31st you will see that the range of the fields is already markedly widening. The fields have been mapped again to-day; and there is a vast improvement, almost if not quite to the normal range, since the patient left the hospital. The boy is here, and you will judge for yourselves that his mental condition is perfectly sound and you will be able to feel the site of the cranial injury. And if you will look at these plates in Macewen's "Atlas of Head Sections" (Plates 29, 31, and 32) you will see that immediately beneath the site of the cranial lesion is the occipital lobe and the calcarine fissure. We cannot, of course, state with the accurate precision of deliberate experiment the site and depth of the cerebral injury. We know that it was superficially extensive, and it may well have been much deeper than the visible appearances, extensive though these were, would have led one to suspect. Bone was driven in and much brain matter was removed. At all events I think we are justified in the conclusion that the temporary limitation in the fields of vision was the result of injury to some parts of the occipital lobe, and from that point of view, if from no other, you will agree with me in regarding the case as one of unusual interest.

Our next case was of a different and more ordinary kind and I bring it before you because it was one in which a

mistake was made in treatment. Mistakes in practice are commonly instructive. I have never hesitated to tell you of my own, for I feel that if a man will not record his mistakes he had better hold his tongue.

CASE 2.—A boy, aged 14 years, fell from a tree and was admitted in a dazed condition with a large hæmatoma in the right fronto-temporal region. The eyelids were swollen and completely closed. There were no one-sided phenomena, but when I first saw him on the following morning (Oct. 27th, 1900), I thought there was a distinct depression as of fracture beneath the hæmatoma. You know, I dare say, that it is sometimes extremely difficult to say whether there is or is not depression of bone when there is no scalp wound. The scalp tissues may have been severely contused and pulped, and if there be added a definite hæmatoma at the site of the blow the physical state of the parts is very suggestive of a depression of bone. The contrast between the injured tissues and those adjoining is abrupt and is such as to give the impression of a defined edge of bone with a depression which feels exactly like the depression of fractured skull. You have always to take this into account in the examination of a contused scalp without open wound. In this case I felt so confident that there was a depression that as soon as the forehead had been sterilised and the eyebrow shaved an incision was made along the outer half of the brow through the scalp tissues. A large hæmatoma was cleared out and then we found that our supposed fracture was the normal depression of the bone immediately behind the anterior part of the temporal crest. No harm was done, it may even have been well that the hæmatoma was got rid of, and the boy left the hospital on Nov. 6th quite well and with hardly any visible scar.

CASE 3.—The third case is that of a man, aged 29 years, who is still in the hospital. He was admitted on Nov. 9th, 1900, having fallen 60 feet from a ladder and in his flight to earth struck his head against something in the way. He was profoundly unconscious, his sphincters were relaxed, and there was slight bleeding from the right ear. This soon ceased and gave us no further concern and it was not succeeded by escape of cerebro-spinal fluid. There was considerable bruising all over the right side of the head, especially in the sub-occipital region, and it seemed just possible that he might have sustained a fracture of the base. There were no one-sided symptoms suggesting the necessity of operative intervention and our only business was to watch him carefully. Improvement in his mental condition was very slow and it was only after an interval of five days that he seemed able at all to appreciate his surroundings, and then he complained greatly of pain in his head. We also thought that there was some evidence of right facial paralysis, confirmatory, if really present, of our supposition that there might have been a basal fracture, but more recently, when he had still further improved, he was able to tell us that this paralysis was of long-standing, the result of an accident some years before. For days he lay complaining of his head, he could not sleep in consequence, and we deemed it advisable to give him bromide of potassium in the hope that sleep might help to lessen his headache. And so it did; he was decidedly better and began to wake up, to take his food better, and to be more alive to things around him. He is now apparently on the road to early recovery, he sits up and reads the paper, but is too talkative and excitable and needs quiet.

We have had in this case an example of what we may call uncomplicated concussion, and yet I would have you remember that after all injuries of the kind the brain itself has almost certainly suffered lesion. In fatal cases you find hæmorrhages, minute or large, in some part of the brain substance, and very commonly there is extravasation of blood into the arachnoid cavity. We are justified therefrom in the conclusion that in those also who recover there has been actual brain lesion. When you get into practice you will often have the questions put to you, what are the prospects of recovery? and what will be the ultimate issue of the case? Very difficult questions indeed you will find them to answer, needing all your tact that you do not commit yourselves to too definite an opinion. They are more likely to be put, and put more often, about cases in which there is prolonged unconsciousness. I do not believe that it is by any means the fact that prolonged unconsciousness is by itself of evil omen. On this very point I have been much interested in the paper by Mr. Tredinnick which you will find in the *British Medical Journal* of Nov. 24th, 1900. "In a case," Mr. Tredinnick writes, "in which I called to my aid the late Sir James Paget in consultation, the unconsciousness had lasted three days and there seemed no means of judging how much longer it might last. He gave it as his opinion that, other things being equal, a certain amount of unconsciousness was good for the patient, as the shaken brain had time more or less to recover, that condition of unconsciousness being for the brain something akin to what a splint would be to an injured limb." I have not looked upon unconsciousness quite in this light myself, but I certainly hold that cases in which unconsciousness has been prolonged are not necessarily those in which there is the worst prognosis. Recently I have seen a man who was unconscious for 14 days after a fall while out hunting, and though there are several abiding local paralyses of special cranial nerves from injury with basal fracture his mental condition shows nothing wrong. This is by no means always so. Concussion of the brain may be followed by all sorts of lasting disturbances, by changes in temper and disposition, by impairment in mental power and physical endurance, by incapacity for the same amount of headwork as before, and even by distinct insanity. In the paper to which I have made reference you will find some interesting examples of the kinds of results which may follow severe head injury. We have seen similar results ourselves in this hospital practice. I do not know how such results may be predicted, but I shall not pursue the subject further now, nor discuss with you the question of treatment, operative or other; but this I would impress upon you: that adequate rest must be given to the brain and that patients must not be discharged too early from the wards.

A SERIES OF 10 SUCCESSFUL CASES OF CÆSAREAN SECTION.[1]

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OVER 50 years ago Dr. Radford of Manchester, in concluding an account of his cases of Cæsarean section in which he lost three mothers and three children out of five cases wrote: "Notwithstanding the unfavourable aggregate results of the Cæsarian section in Great Britain and Ireland I think from my own experience, shown in the above statements, I am justified in advocating it as an operation of election, not merely having recourse to it as one of necessity according to our present obstetric rule when no other means can suffice, but to give it a preference over the use of the crotchet in cases when neither premature labour, the long forceps, these two operations combined, or turning will meet the exigencies of the case. I am a warm, and I hope a sincere, advocate of its adoption and doubt not but if it is early and properly performed and if the after-treatment is judicious it will be even more successful than it has been in my hands."[2] Now it is not my present intention to write a history of the Cæsarean section in this country nor even, formally at least, to attempt a plea in favour of the operation, but I quote with satisfaction the words of Dr. Radford, whose success was only limited, as indicating the aversion with which the experienced accoucheur when confronted with the dire alternative proceeds to perform the so-called operation of craniotomy upon a living and viable child. My quotation will, I hope, hint to you the frame of mind in which I have approached each case to be operated upon. Dr. Radford lost 60 per cent. of both mothers and children. I, with the advantages of the recorded experience of another half-century, have lost neither mother nor child. Yet I should never, I believe, resolve on the operation with a light heart, but constantly, as if it were one's first case, see to it that the operation was "early and properly performed" and that the after-treatment was to the best of my judgment "judicious." It is only, I believe, in this way that the bounds of the indications for the operation will become extended and the results so improved as to banish from practice some of the remaining opprobria of the obstetric art. Without further preface I shall proceed to give the details of my cases, reserving to the end some criticisms and

[1] A paper read at a meeting of the North of England Obstetrical and Gynæcological Society on Nov. 16th, 1900.

[2] Successful Case of Cæsarean Section, with remarks, read at Worcester, August 1st, 1849, by Thomas Radford, M.D., &c.

remarks on indications and technique which the experience that I have obtained suggests.

CASE 1.—The patient, a woman, aged 38 years, X-para, and of German nationality, admitted into the Maternity Hospital on August 29th, 1890, in labour, was confined on the same day and was discharged on Oct. 17th. Her condition during pregnancy had been fair, except for severe "rheumatic" pains. She had suffered from these pains for four years (osteomalacia), but especially during her present pregnancy. Lately she could only move about the house with a sort of painful sliding motion. There had been no complication of pregnancy except the pains mentioned, which were referred chiefly to the pelvis. The patient had had eight children and one miscarriage. In her first confinement delivery had been effected with instruments under chloroform. The child was alive and was living at this time. The puerperium was normal. Her second confinement, which was one of spontaneous labour, was over before her medical attendant arrived. The child lived and was then 15 years of age. There was no "rheumatism" in those days. Spontaneous labour characterised her third confinement also; the child lived for nine years and then died from hydrocephalus. Her fourth labour was a rapid spontaneous one of a living child, who after surviving for 11 months succumbed to "epileptic" fits. There was no "rheumatism." No instruments were used in her fifth labour and the child was still living and aged 10 years. At the sixth confinement, which took place in hospital, instruments were required. The child was living still. There had been no "rheumatism" during pregnancy. The seventh labour also took place in hospital and was effected with instruments under chloroform. The child was living. "Rheumatism" had come on. In her eighth confinement the patient was attended by Dr. Waddell of Rusholme. Chloroform and instruments were said to have been used, but the child came feet first. There was a history of turning having been performed. The child was dead, but was alive at the beginning of the labour. The patient had "rheumatism" all the time; she could hardly walk at all. She was better after the confinement and could walk without sticks. Dr. Waddell warned the patient that if she became pregnant again she must let him know by the sixth month. The next time he heard of her was when he received a summons to attend her when she was in labour at full term. There had also been, as I have said, one abortion. The patient had suckled all her living children. On examination the patient's general appearance was good. She was well nourished and the breasts were large. On palpation the height of the fundus was found to be to the ensiform cartilage. The uterine tumour was very prominent. The conjugate diameter of the true pelvis was about two and a quarter inches. All proportions were lost. The pelvis was crumpled up. The rami of the pubis came so close that the index finger could only be inserted into the arch. Diagnosing the presentation, the head appeared to be unusually high up in the false pelvis. Pains began at 9 A.M. on August 28th. They were strong in character and regular. Artificial interference had to be resorted to, and Cæsarean section was performed. The outlet being contracted (the inguinal canal two and a quarter inches), Porro's operation was performed on the 29th at 4 P.M. Chloroform and ether were used and I was assisted by Dr. Waddell and the house surgeon. An incision was made reaching from two inches above the umbilicus to near the pubes. Bleeding was stopped by the forceps. The peritoneum was carefully opened, and the gravid uterus was brought forward into the wound. An elastic ligature was passed round the neck of the uterus, ready to be tightened when the incision was made. An incision was then made into the anterior wall of the uterus. This came upon the placenta which was cut through. The ligature at the neck of the uterus was tightened and the child was removed, followed by the placenta and membranes. Very little hæmorrhage occurred. The neck of the uterus was compressed by means of the rubber tube by the assistant. Two large pins were passed through the lower portion of the uterus. A wire *serre-nœud* was applied and tightened, but only to restrain hæmorrhage, not to cut. The uterus was then rapidly removed with scissors with but little hæmorrhage. The ovaries and tubes were removed separately, their stumps not being included in the wire. The peritoneum of the stump was secured by sutures to the parietal peritoneum round it and the *serre-nœud* was left on. The abdominal incision was closed in the usual way, leaving the stump projecting from the lower end of the incision which was prevented from sinking back by the pins in the usual way. A drainage-tube was inserted into the peritoneal cavity, reaching into Douglas's space. The wound was dressed with lint and perchloride solution (1 in 2000). The patient bore the operation very well and suffered very little from shock, perhaps because so little blood was lost. The after-treatment was carried out as follows. The temperature at 8 P.M. on the same day was 98°F. and at 10 P.M. it was 99°, and the pulse was 106. Beef-tea and brandy enemata were administered and warm water (a teaspoonful at a time) was given by the mouth. The wound was dressed on the 30th with perchloride solution (1 in 2000), the fluid was drawn off through a drainage-tube, and a catheter was passed every six hours. Suitable nourishment was given. There was no sickness. On Sept. 1st the patient was taking liquid food very well. The urine was passed naturally but the bowels were constipated. Five grains of calomel in separate doses were given and the wound was dressed with perchloride solution (1 in 2000). The patient was sick. On the 3rd the patient took ordinary diet. The wound was poulticed every three hours. On the 4th the vaginal douche was employed and poultices were continued every three hours. There was a great deal of discharge. Several stitches were removed. The stump was sinking. The temperature was 100·4° and the pulse was 80. Ordinary diet was taken and the patient slept well. On the 5th antiseptic poultices were continued every three hours. On the 6th the *serre-nœud* was tightened. The sloughing stump came away without any hæmorrhage or breaking any of the adhesions which had been formed. On the 8th the poultices were discontinued and the wound was dressed with carbolic glycerine (1 in 30). On the 13th the patient looked very well and only rheumatic pains were complained of. On the 22nd she sat up for the first time and said that she felt very well. On the 26th she got out of bed and sat in an easy chair. There was no pain in the abdomen. The rheumatic pains were much less severe and she could move her feet better than she had done for months. On Oct. 14th a small portion of the wound had not healed and there was still some pus. Otherwise the patient was very well On the 17th the wound was still the same. A dressing of red lotion and mercury was employed and the patient was discharged. The child, a male, was born alive and was of full development, measuring 22½ inches in length, and weighing 7 lb. 8 oz. He had improved much when the patient was dismissed from the hospital, but was still having convulsions. He was fed from the bottle.

Note on Case 1.—The nursing notes have been given, perhaps, at too great length. My object is chiefly to call attention to the long and unsatisfactory progress of healing which must be a constant feature of the extra-peritoneal method of dealing with the stump. The obstetric history shows the onset of the symptoms of mollities ossium and its extremely rapid development during the last pregnancy. This disease called for the removal of the tubes and ovaries, and the operation appears to have been moderately successful. I saw the patient at the Southern Hospital about two years after the operation. The child was dead and she had neglected to wear her abdominal belt, so she had an enormous ventral hernia. I have never seen her since, but some inquiries were made about her this summer by the practitioner who was then attending her. I sent him an account of the operation, but I have received no further information as to the progress of the mollities ossium. No milk ever appeared in the urine after operation.

CASE 2.—The patient, aged 23 years, primipara, was admitted to hospital on Nov. 27th, 1890, on which day she was confined, and was not discharged until Jan. 10th, 1891. It was elicited that menstruation had begun at the age of 15 years, that its duration was three days, and that the quantity was small. The period of the last menstruation was from Feb. 1st to 7th. The date of her quickening she did not remember. Her condition during pregnancy had been normal. There were no complications. On examination the patient was found to be a starved-looking deformed dwarf. Her breasts were good. On palpation the fundus was found to reach the ensiform cartilage. The uterine tumour was very prominent. The measurements of the pelvis were as follows: iliac crest, nine inches; iliac spine, seven and a half inches; external conjugate, six and three-quarter inches; true conjugate, three inches; and the transverse diameter of the outlet, two inches. A prognosis of obstruction of labour on account of the deformity of the patient was made. The pains, which began at 3 A.M., were strong in character. Cæsarean section and Porro's operation had to be

resorted to. When the patient came to the hospital on the morning of Nov. 27th the os was found to be of the size of half-a-crown. This dilated rapidly and the head came within reach of the finger but it could not be delivered on account of the contracted outlet, which measured roughly two inches. The patient was greatly deformed, especially about the legs. The urine contained a large amount of albumin. I decided to perform Porro's operation. At 9 P.M. the patient was put under chloroform. An incision was made from above the umbilicus right down through the linea alba two inches above the pubes. The vessels were secured by the forceps. The peritoneum was opened. The gravid uterus was brought out through the incision and an indiarubber ligature was passed round the neck of the uterus. An incision was then made into the anterior wall of the uterus several inches in length and the child was rapidly removed, but the placenta was left. Slight hæmorrhage ensued. As soon as the child was removed the elastic ligature was tightened to control the hæmorrhage. The placenta came away. The *serre nœud* was then applied below the body of the uterus and tightened, and pins were passed through. The peritoneum was then stitched to the uterus, and the uterus was cut away without much bleeding. The abdominal cavity was irrigated with saline solution and a drainage-tube was left in. The stump of the uterus, with *serre-nœud* tightened, was brought forward in the abdominal wound, another pin was passed through the stump, and the peritoneum of the stump was sutured to the parietal peritoneum all round, thus securing the stump in the wound. The wound was dressed with corrosive sublimate solution (1 in 2000) and the stump was dressed with glycerine and carbolic. The patient stood the operation well and did not suffer much from shock. The child, a female, was alive and weighed six pounds. Enemata of beef-tea and brandy were administered. The patient was restless and she was sick twice. The temperature was 99° F. and the pulse was 120. On the 28th the wound was dressed with $HgCl_2$ (1 in 2000) and the stump with carbolic glycerine (1 in 10). The tube was syringed out, removing some clots of blood. The wound was dressed again at 11 P.M. and the tube was removed, the discharge being quite clear. The patient had a good deal of pain. Morphia was administered hypodermically and 34 ounces of urine were drawn off. There was a slight discharge from the vagina. Beef-tea and brandy enemata were administered and warm water was given by the mouth. On the 30th the patient was better; there was less pain, the pulse was 116, and the temperature was 99°. The lower part of the wound and the stump were dressed as above and calomel was administered. There was no milk in the breasts. The urine contained albumin and a trace of sugar. On Dec. 1st the patient was better and the bowels were moved. The wound was dressed and the stump was covered with powder salicylic acid 1 and 2 tannic acid. The pulse was still quick. When the wound was dressed on the 3rd there was a good deal of foul discharge from the stump. The pulse was slower and there was small quantity of sugar and albumin in the urine. The wound was dressed three times on the 4th with spirit lotion. Ordinary diet was taken. On the 5th the *serre-nœud* was removed, with the stump and one pin. On the 6th the wound was dressed three times, the stump and pin were removed, and the cavity was dressed with lint steeped in carbolic lotion. On the 7th the wound was brought together with strapping. A dressing of red lotion was used on the 9th and the wound was healthy and granulating. The patient went home on Jan. 10th quite well. Her general condition was now very good. No milk ever appeared in the breasts, but there was a trace in the urine. The wound healed. The general condition of the child was poor. There was a specific rash and the hair was falling off.

Note to Case 2.—The notes hardly convey a sufficient idea of the deformities of this poor creature. Her extremities were those of a little child, the lower ones being specially ill-developed. She had never been able to walk in the ordinary way, but had acquired such mode of motion as her rudimentary legs permitted. The pelvis was also arrested in development and had in all probability lost its symmetry by efforts at locomotion. The patient and the child are still living. A photograph shown to me this month (November, 1900) shows in the child marked traces of the congenital disease.

CASE 3.—The patient, aged 28 years, II-para, was admitted to hospital on Feb. 26th, 1892. She was confined on the same day and stayed in the hospital until March 31st. In her case menstruation had begun in her seventeenth year. It was of the 28 days type and it lasted for five days, the quantity of the flow being large. She had not menstruated since the last week in May, 1891. Her condition during pregnancy had been very good, no complications arising. There had been one previous pregnancy and delivery at full term. Craniotomy had been performed and the operation had left marked traces on the cervix. On examination of the patient when she was admitted to hospital she was found to present a good general appearance. The breasts were small and the nipples were poor. From the right and left iliac spines to the umbilicus the measurements were the same—viz., eight and a half inches, and from the pubes to the umbilicus the measurement was seven inches. The abdominal walls were firm and the fundus was eight inches above the umbilicus. Iliac crest, 10 inches; iliac spine, nine inches. Vaginal exploration: pelvis—external conjugate, six and three-quarter inches; true conjugate about three and a quarter inches. When the patient was admitted on the evening of Feb. 26th the membranes were said to have ruptured some hours previously, and she was having slight pains. She was put to bed and she remained quiet all night. On the morning of the 27th an enema was given, the vagina was douched with perchloride of mercury, and at 10.30 A.M. the membranes again ruptured, as there was a gush of liquor amnii. The patient was anæsthetised with chloroform and an incision of about seven inches in length was made in the middle line, extending from above the pubes to half way between the umbilicus and the ensiform cartilage. The peritoneal cavity was opened with scissors, and the uterus was drawn bodily out and wrapped in cloths wrung out of hot sterilised water, the peritoneal cavity being filled with warm sponges. An incision was made in the middle line of the uterus and its cavity was opened. The placenta was found to be situated anteriorly, the incision being immediately over it. It was peeled off at once and the child was quickly delivered. An elastic band had previously been passed round the neck of the uterus, and at this stage it was tightened to prevent hæmorrhage. The hæmorrhage was slight and no amnionic fluid was liberated through the abdominal incision, the membranes having been previously ruptured and the fluid allowed to drain away. The uterus quickly contracted and the wound in its walls was carefully sutured with deep silkworm-gut sutures and superficial catgut ones. The uterus was then returned into the pelvis, though the pelvis was too contracted to allow it to be replaced like a normal uterus. The abdominal wound was sutured with deep silk and superficial silkworm-gut sutures, a long Keith's drainage-tube being passed through its upper part, passing behind the uterus into Douglas's space. The lower three-quarters of the wound was dressed with carbolic glycerine and strapped, perchloride of mercury dressing being placed over the tube. At 3 P.M. the patient was very restless and a quarter of a grain of morphia was given. She was sick at 5 P.M. The temperature at 6 P.M. was 98·4° F. She slept for an hour. At 8 P.M. she was again sick; small quantities of hot water were given. A vaginal douche of boric lotion was administered. At 10.30 P.M. one-fifth of a grain of morphia was given. On the 28th the patient complained of having had cramp in the leg all night. She dozed at intervals. One-fifth of a grain of morphia was given at 5 A.M. She slept for an hour and a half afterwards. She had been sick a little twice during the night. An ice-bag had been put on for an hour by order of the house surgeon. The urine was drawn off by catheter—36 ounces since the operation. The temperature at 8 A.M. was 99° and the pulse was 100. On March 1st the bowels acted fairly well. The evening temperature was 99° and the pulse was 104. There was very little milk in the breasts. Urine 54 ounces; it contained no sugar. On the 3rd the breasts were distended and hard, and as the baby could not be got to suck the breast-pump was used and the breasts became much softer. There was sugar in the urine. On the 31st the patient went home in very good condition. The child was a male, living, fully developed, and weighing eight pounds. The infant was fed by bottle as it could not be got to take to the breast and showed at the time of the departure of the patient from the hospital much improvement.

Note to Case 3.—This was the first case of conservative Cæsarean section of the series. The patient was of a different class from those in the two preceding cases. She was a clean, healthy-looking woman without any obvious

deformity, though she was rather under size. The appearance of the head suggested rickets in childhood. The pelvis belonged to the flat rachitic type. She was very anxious to have a living child and I did not think it right to produce sterility by any extension of the operation. It may be noted that after the conservative operation the breasts filled and sugar appeared in the urine. This patient came to see me two years later. She was pregnant between three and four months and talked quite cheerfully of a second operation. A message was sent to me about a month later to say that she had miscarried.

CASE 4.—The patient was a woman, aged 35 years, II-para, who was admitted to hospital on April 2nd, 1892. She was confined on the day of admission and was discharged on May 11th. In the case of this patient menstruation, which began at the age of 14 years, was of the 28 days type and lasted three days; it was small in quantity. She had not menstruated since the last week in June. The patient's condition during pregnancy had been very good, but she had suffered from a troublesome cough. At a previous labour at full term craniotomy had been performed. (It was reported to me indirectly that two medical men were occupied "several hours" with the craniotomy.) The patient was sent to the hospital at the seventh month for examination because of the craniotomy which she had undergone six years previously. The conjugate diameter of the pelvis was from two and a half to two and three-quarter inches, and as induction of premature labour would probably end in perforation now and in future pregnancies, the patient was advised to wait for the full term and then to undergo Cæsarean section and Porro's operation. Physical examination on admission at the end of the term of pregnancy showed the general appearance of the patient to be fairly good. The breasts were large and well-formed and the nipples were good. From the right iliac spine to the umbilicus the measurement was nine inches, and from the left iliac spine it was nine and a half inches; from the pubes to the umbilicus measured seven and a half inches. The abdominal walls were firm. Physical examination of the cervix and orifices revealed the os to be dilated to the size of a florin. The rectum was emptied by an enema; there were large hæmorrhoids. The bladder was emptied by the catheter; there was no albumin in the urine. Pelvis: iliac crest, 10½ inches; iliac spine, nine and a half inches; external conjugate, five and three-quarter inches; true conjugate, two and three-quarter inches or less. A vertex presentation and a first position were diagnosed. Labour had commenced at 2 A.M. on the day of admission to hospital and a Cæsarean section was performed at noon. The patient was put under chloroform, the os being dilated but the membranes were not ruptured, and an incision about seven inches long was made in the middle line of the abdomen. The peritoneal cavity was opened quickly with scissors, the uterus was drawn forwards, secured by elastic tubing, and immediately opened into by a longitudinal incision in its lower half, and the child was quickly delivered. The operation up to this point was completed in a few seconds. The abdomen was then packed with sponges and amputation of the uterus by the intra-peritoneal flap method was proceeded with deliberately, the whole of the body of the uterus being removed. All hæmorrhage was stopped as the operation proceeded and the rubber tubing was still retained round the stump in case of emergency. The uterus having been removed, the stump was methodically sutured, the peritoneum of the flaps being brought accurately into apposition and fine silk and catgut sutures were inserted at very short intervals. The hæmorrhage was easily controlled at all points of the operation. The abdominal cavity was irrigated with saline solution, a Keith's drainage-tube was inserted, and the abdominal incision was closed with deep silk and superficial silkworm gut sutures and dressed with sponges wrung out of perchloride of mercury solution. The patient suffered considerably from shock, but she rallied in the course of the afternoon. At 10 P.M. the temperature was 100·6° F., and the pulse was 130. Nutrient enemata of beef-tea and brandy were administered every three hours and warm water was given frequently by the mouth. On the 3rd it was elicited that the patient had had a very comfortable night. There had been no sickness. She had taken milk and beef-tea in small quantities. The morning temperature was 99°. Urine to the amount of 12 ounces was drawn off by catheter. At 11.30 A.M., the wound was dressed and two ounces of red-coloured fluid were withdrawn. The patient remained very well all day. At 8 P.M. the temperature was 100° and the pulse was 120. There was some suggestion of ether bronchitis. Teaspoonful doses of compound tincture of camphor were given to relieve the chest symptoms. The patient was taking nourishment very well. There was no milk in the breasts. On the 4th it was ascertained that the patient had had a very good night, having slept well. The morning temperature was 93·4° and the pulse was 110. Urine, 47 ounces. A vaginal douche of perchloride of mercury (1 in 4000) was administered twice daily. The discharge was moderate. The wound was dressed at 11 A.M. One and a quarter ounces of red turbid fluid were withdrawn. The temperature at 6 P.M. was 100°. On the 5th the patient was very comfortable. The temperature was 99° and the pulse was 116. Urine, 40 ounces; there was no sugar. The discharge of lochia was free. The wound was dressed at 11.30 A.M. A little clear sanious fluid was drawn off, and the glass tube was removed. On the 7th the bowels acted freely. The patient had had a very good night. By the 20th the wound had quite healed, except a small sinus where the drainage-tube was situated. On May 6th the patient got up wearing an abdominal belt. She felt very well. On the 11th she went home apparently well. The infant was also in very good condition. The patient's condition when discharged from the hospital was very good. There was no milk in the breasts. The child, a female, fully developed, was fed from the bottle.

Note on Case 4.—This case presented a problem which every man must solve according to his conscience and to his views as to his functions as a member of a profession that claims to be guided by ethical considerations—How often are we to perform craniotomy upon a woman whose pelvis will not allow of the passage of a viable child, and to what extent is the problem complicated by a second pregnancy? The special form which the operation took arose from the opinion which I had formed with regard to the tedious healing and other objectional features in the extra-peritoneal treatment of the stump. The absence of milk from the breasts after Porro's operation will be again noted, and there was never any trace of sugar in the urine. I was under the impression that this was the first time in the history of obstetrics that the intra-peritoneal treatment of the stump had been adopted. After some literary research I discovered in an Italian medical journal the record of two cases operated on in the same way by Porro and Mangiagalli at Milan some time before. The after-history of the case has not been obtained, as the patient disappeared from the quarter of the city where she formerly resided.

CASE 5.—The patient was admitted to the Manchester Maternity Hospital on April 10th, 1896. She had been visited by a midwife the same morning, who found her to be in labour and at once sent her to the hospital. She was a primipara, aged 25 years, residing in Ancoats. The following facts were noted on the day of operation. Menstruation began at the age of 17 years and its duration was from four to five days and the quantity was profuse. The date of the last menstruation was the second week in July, 1895. She had quickened in the first week in December and had enjoyed very good health during her pregnancy. There was morning sickness for the first two months, but nothing unusual was observed until the beginning of labour. Abdominal examination showed the fœtus to be lying above the pelvic brim and the head in the right iliac fossa. The uterine tumour was extremely prominent and appeared to rise unusually high towards the thorax. At iliac crests, nine and a half inches; at iliac spines, nine inches; external conjugate, four inches. Vaginal examination showed the diameter of the true conjugate to be about two inches; the membranes were protruding. The external genitals were swollen and darkly congested. The patient had the left hip ankylosed and the left thigh flexed upwards and inwards and pressing upon the abdomen. The right leg was normal. She was extremely deformed owing to the condition of the left leg and the extreme degree of lordosis. She was small in size, had lost one of her eyes, and her teeth were very defective and unhealthy. It was at once obvious that the patient could not be delivered even by embryulcia without much tedious and dangerous manipulation, and abdominal section was resorted to as the best course under the circumstances. The patient was put under chloroform and an incision was made through the abdominal wall reaching from half-way between the umbilicus and xiphoid cartilage to within three inches of the symphisis pubis. The position of the left knee caused much embarrassment from first to last. It was owing to

this special deformity that the wound was made so high up. On opening the peritoneal cavity sponges were introduced to prevent escape of the intestines. The uterus was quickly incised, the membranes were opened, and the child was extracted by the leg. The membranes and placenta were then quickly peeled off. During these manipulations the sides of the abdomen were firmly grasped with both hands by Dr. Scott so as to steady the uterus. When the uterus was dragged forward he promptly applied a strong rubber tube round the isthmus to control the hæmorrhage. In hurriedly extracting the child the peritoneum on the left lower angle of the wound was torn to a slight extent. The uterine wound was closed with deep silk and superficial catgut sutures. The sutures were introduced with Hagedorn needles and were passed completely through the muscle. The rent in the peritoneum was also carefully sutured. The sponges had been so placed as to conceal and protect everything except the uterus itself. On removing the elastic tube there was a rapid oozing of blood; this was finally controlled by additional sutures and manipulating and simulating the uterus into firm contraction. The abdominal wound was closed by deep silk sutures passing through the peritoneum and skin and aponeurosis and superficial silkworm gut only including skin. A Keith's drainage-tube was placed in the lower angle of the wound, being directed to the left, where there was something like a pelvic cavity. The projecting portion of the tube was supported by antiseptic sponges, and a sponge wrung out of corrosive sublimate solution covered by guttapercha tissue completed the essential portion of the dressing. The operation was completed at 1.45 P.M. At 2 P.M. the temperature was 98° F. and the pulse was 116. At 4 P.M. the patient was rather restless; one-eighth grain morphia was given, after which she slept at intervals till 6 P.M.; the temperature was 98·4° and the pulse was 116. Enemata of beef-tea and brandy were given, also sips of hot water by the mouth. There was no sickness. Seven ounces of urine were drawn off by catheter. There was a small amount of albumin. At 10 P.M. the patient was fairly comfortable. The temperature was 100·8°, the pulse was 112, and there was very little hæmorrhage from the vagina. On the 11th, at 10 P.M., the temperature was 101° and the pulse was 140. An icebag was applied to the abdomen. An hour later one-eighth of a grain of morphia was injected. Flatus was passed. The patient was slightly sick once. The wound was dressed at 11 A.M. on the 12th. There was no tenderness or distension. There was no milk in the breasts. Sugar was found in the urine but no albumin. The temperature rose gradually during the day and at 10 P.M. it was 103° and the pulse was 140. A vaginal douche was given during the evening. The lochia were quite sweet. The patient was restless but not in pain. Flatus was passed. On the morning of the 14th the patient felt very well. The temperature was 101·8° and the pulse was 120. The bowels had acted freely during the night. She was taking plenty of milk. There was no milk in the breasts. A vaginal douche was given. The lochia were quite sweet. The wound was dressed at 9.30 A.M. It looked very well. At 10 P.M. the temperature was 102·8° and the pulse was 120. The patient had a very comfortable day, during a great part of which she slept. There was still a trace of sugar in the urine but no fulness of the breasts. At 2 P.M. on the 15th the temperature was 104°, the pulse was 130, and the respirations were 37. The patient did not complain of anything and seemed to be comfortable enough. At 6 P.M. the temperature was still 104°. Dr. A. W. W. Lea washed out the uterus but found nothing abnormal or offensive. The wound was dressed again and some pus was withdrawn. Two sutures were removed. 10 grains of quinine were given. On the 16th it was ascertained that the patient had slept well during the night and she felt very comfortable in the morning. The temperature had come down gradually during the night and at 8 A.M. it was 101°, the pulse was 112, and the respirations were 30. The cough being a little troublesome a dose of cough-mixture was given. She was taking milk and beef-tea. On the 18th the patient felt very well. The temperature was 98·8° and the pulse was 104. At 6 P.M. the temperature was 101·2°, and the pulse was 102. The cough was again rather troublesome and medicine was prescribed. She was taking milk, beef-tea, and eggs. There was no trace of sugar in the urine. She passed a rather restless night. On the 19th the temperature was 100·6° and the cough was troublesome. At 10.30 A.M. the wound was dressed; it looked unhealthy and not inclined to heal. On the 23rd the patient was going on well and the temperature was normal. The wound, which looked healthy, was strapped and dressed with red lotion. There was no lochia. The douches were continued. On the 29th the patient was very well and the wound looked healthy. A swelling had formed over the sacrum; it looked inflamed, but was not painful. Boric fomentations were applied. The temperature rose in the evening to 100·8° and the swelling over the sacrum was much inflamed. On the 30th the patient was taking full diet, with stout. The evening temperature rose to 103·8°. Dr. T. V. Cunliffe opened the abscess over the sacrum and about an ounce of pus escaped. From this time there was nothing to record except the ordinary facts of convalescence. The involution proceeded only slowly but fairly satisfactorily. The uterus, owing to the narrowness of the brim and other deformities, appeared to remain above the true pelvis, even when the patient was well and ready to go home.

Note on Case 5.—There was at first some ground for fear that cellulitis might occur, owing to the injury to the peritoneum so low down in front of the uterus. The formation of abscess, owing to this cause, was not infrequently recorded as the cause of death in the earlier days of the revival of Cæsarean section. This was the reason for keeping in the drainage-tube for so long a time. It produced a sinus by which an abscess high up under the peritoneum, on the left side to which the injury inclined, might have been reached with comparative facility and safety. In the absence of obstetric symptoms it is probable that the high temperature and pulse were due to some extent to the bronchitis. The uterus was not removed according to Porro's method, or any modification of it, in the belief that the conservative operation was the safest and best. The child was living. It was even vigorous from the first, showing no signs of asphyxia. It was a male, fully developed, and weighed at its birth seven and a quarter pounds. The infant was strong and well when the mother left the hospital, and weighed nine and a quarter pounds. As to the patient's history, the following information was obtained by Dr. Cunliffe, who was the house surgeon during her convalescence. She had been quite healthy until she was five years of age. She then had a fall to which she attributed her condition. She became lame in her left leg after her fall and was admitted as an in-patient to the Ancoats Hospital from which she was discharged as incurable. She did not appear to have been treated for hip-joint disease. Later she was an in-patient in the Clinical Hospital for nine weeks and she said that she was discharged from there as incurable. While she was in this hospital extension appears to have been applied to the left leg for hip-joint disease. At the age of nine years she was admitted to the Crumpsall Workhouse Infirmary where she remained for three years. There two operations were performed upon her, the left hip-joint being excised. At the time she left the workhouse hospital several sinuses still remained about the left hip-joint which continued to discharge for about three years. By that time the hip-joint was flexed to the same extent as at present and her spine was in the same condition of curvature (lordosis). At the end of three years the sinuses had healed up and there had been no discharge from them since. She had had no further trouble with the leg except that arising from the position in which it was ankylosed. The right leg was not abnormal and the patient could walk with the aid of a crutch. The patient went home on June 9th.

CASE 6.—The patient, a married woman, aged 30 years, was admitted to the Southern Hospital. A diagnosis of pregnancy and solid ovarian tumour was made. The patient was admitted to the Maternity Hospital on Dec. 31st, 1899, in the first stage of labour. On examination it was noticed that the abdomen was of a peculiar shape, the uterine tumour being elongated upwards. At the time labour pains were few and weak, although other abdominal pain was present almost continuously. External examination showed that the abdomen was distended by the pregnant uterus but the abdominal ovoid was peculiarly elongated. The fœtal head was felt quite above the pelvic brim and was moveable, and the fœtal heart was distinctly audible high up in the abdomen. Per vaginam the os uteri was found to be displaced upwards and forwards above the pubis and was difficult of access to the examining finger. Only slight and commencing dilatation of the os uteri was found. Bulging into the posterior vaginal wall, commencing about one and a half inches from the vulval orifice, was found a large mass, not fluctuant, but of unequal consistence, and apparently fixed.

This mass was also felt to bulge into the anterior rectal wall. By combined recto-vaginal examination it was readily mapped out in Douglas's space. On examination the head was still above the brim and moveable. The os uteri was still found to be displaced upwards and forwards by the tumour and it was now found to admit two fingers so that the fœtal head could be felt. The tumour itself was still fixed in the same position in Douglas's space. Cæsarean section and ovariotomy were performed on the day of the patient's admission to the hospital, ether being employed. An incision from seven to eight inches long was made in the linea alba. The abdominal cavity was opened and the uterus was exposed. The uterus was withdrawn from the abdomen and protected with warm sponges and towels; an elastic tube was passed round the neck of the uterus and was drawn tight. A large sponge was placed behind the uterus. An incision was then made down the middle line of the anterior uterine wall. Liquor amnii gushed through the wound. The fœtus was promptly extracted through the wound and the umbilical cord was divided. The placenta (which was on the posterior wall of the uterus) and the membranes were peeled off and withdrawn. The shrunken uterus was closed by deep and superficial sutures. The elastic tube was removed and only trifling hæmorrhage occurred. Next the tumour was withdrawn from Douglas's pouch. It was found to be a large fleshy, not fibroid, ovarian tumour with a pedicle. The pedicle was ligatured and the tumour was removed. A Keith's drainage-tube was inserted. The abdominal wound was closed by deep silk sutures and by superficial sutures. The pulse was very good all through the operation. The operation, which was begun at 4 P.M., was completed at 5.30 P.M. At 6.50 P.M. an enema of three ounces of beef-tea and an ounce of brandy was administered. The pulse was 104 and good. The patient had to have morphia administered hypodermically several times in doses of one-eighth of a grain to relieve pain which she complained of during the first fortnight and which was caused principally by flatulence. She also had slight headache at times. Vomiting was slight. The temperature was high for the first eight days (from 101·2° to 103·8°). It then gradually became lower, and at the end of two weeks it was normal. The pulse was rather quick for the first 10 days (from 100 to 120), then it fell below 100 and remained steady. Flatus was passed 24 hours after the operation. Three grains of calomel in hourly doses of one grain were given 28 hours after the operation, followed by half a seidlitz powder given six and eight hours after the last dose of calomel, and then again followed in another six hours by a turpentine enema. The bowels were then moved. The bladder was catheterised during the first 27 hours. A trace of sugar appeared in the urine on the day following the operation. There was some hæmorrhage from the vagina in the first 24 hours. The character of the discharge then changed. Vaginal douches of weak carbolic lotion (1 in 100) were administered. On the fifth day after the operation the baby was put to the breast and suckled at once, but would not take it again when put to the breast and so was fed by hand. The mother had not much milk, and there was no trouble with the breasts. A fluid diet was given during the first week. The wound was first dressed 20 hours after the operation. The dressing was done in the usual way, and the drainage-tube was withdrawn. It was dressed again in 48 hours; it looked well. The abdomen was slightly distended. Dressing was done frequently. There was suppuration along the suture track. The wound had to be fomented. The patient made a good recovery, and was discharged eight and a half weeks after the operation.

Note.—This patient was examined in November and the pelvis was found to be normal; there was hardly a trace of tissue changes at the site of the stump of the tumour. The uterus was high and adherent to the anterior parietes as in a case of ventro-fixation.

CASE 7.—The patient was a married woman, aged 27 years, who had had one child (stillborn). She was admitted to the Maternity Hospital on April 4th, 1900, and was advised to wait for full term. She was confined on June 5th and was discharged on July 9th. Menstruation had begun at the age of 17 years. It was of the 28 days type, lasted three days, and was of moderate quantity. The period of the last menstruation was from August 30th to 31st, 1899. Quickening had taken place in January. The patient's condition during pregnancy had been very good. She had been delivered of the stillborn child by forceps on Feb. 7th. The patient had gone to the full term on that occasion. Her health during her present pregnancy had been good. In general appearance she was under-sized, but not deformed. Her breasts were of good shape. The fœtal heart was heard on the right side. Pelvis: iliac crest, nine and a half inches; iliac spine eight inches; external conjugate five and seven-eighths inches. A vertex presentation was diagnosed. Labour occurred on June 5th when Cæsarean section was performed at 11 A.M. The patient was put under ether and a vertical incision was made in the middle line of the abdomen; the uterus was made to bulge through the incision, and an indiarubber loop was thrown round the cervix. The uterus was opened by a vertical incision, the placenta which lay in front was torn through and pushed aside, and the child was removed. The loop was then tightened and the uterus was sewn up by deep silk and superficial catgut sutures, and the abdominal wound by deep silk and superficial silkworm gut sutures. There was no drainage. A dressing of carbolic and glycerine was employed. The membranes were not punctured before the operation. The operation was arranged for and performed in the absence of labour. The child, a male, was alive and was fully developed—length, 20 inches; weight, eight and a half pounds. The condition of the patient on dismissal was good. There was not much milk. The general condition of the child was also good. The breast and the bottle were used in feeding the infant. The umbilicus healed. The patient made a good recovery and the wound was quite healed by the twelfth day. During the day of the operation and on the following day the patient had severe after-pains. These were thought to be induced or increased by the ergotine which had been given. Their severity was modified by morphia. When eight days old the infant weighed six and a half pounds, did not seem very strong, and gained only one pound in weight from the eighth day to the time of the departure of the mother from the hospital.

Note.—When this patient was examined in November it was found that complete involution of the uterus had taken place, but the uterus was high up and adherent in front as after ventrofixation.

CASE 8.—A married woman, aged 31 years, who had had two children and upon whom craniotomy had been performed on each occasion, was admitted to the Southern Hospital on June 10th, 1900. A diagnosis of contracted pelvis and pregnancy was made. The patient having been twice pregnant, but on each occasion craniotomy having been necessary, she, in order to have a living child, gave her consent to Cæsarean section. It was elicited that menstruation, which was of the 28 days type, from four to five days in duration, and moderate in quantity, had been regular and painless. She had last menstruated in the middle of September, 1899. When examined on admission, the patient being in labour, the os was found to be of the size of a florin. The operation of Cæsarean section, which was proceeded with at 4.15 P.M., was completed at 5.15 P.M. A vertical median incision was made in the abdomen and the gravid uterus was made to protrude. An incision was made in the uterus after a loop of indiarubber had been thrown round the cervix. The placenta lay in front; it was rapidly torn away and the child was taken out. The loop was tightened and deep silk and superficial catgut sutures were inserted into the uterus and also in the abdominal incision. There was no drainage. A dressing of carbolic and glycerine was used. Previously to and at the end of the operation one-hundredth of a grain of ergotin was injected hypodermically. A rise of the temperature and quickening of the pulse, owing probably to some suppuration in the suture tracks, followed. The mother could not suckle the child, the breasts not developing at all. Pain was complained of at intervals during the first 48 hours. Morphia in doses of one-eighth of a grain was given hypodermically when necessary. There was no vomiting to speak of until after the patient had had calomel; then she vomited two or three times. During the first nine days after the operation the temperature was high. 12 hours after operation the temperature rose to 102° F. and remained high, rising to 104·2° on the evening of the fifth day. It then gradually fell to normal on the ninth day and remained steady. The pulse remained under 100 during the first 24 hours; then it quickened and was rather rapid for six days (from 100 to 120). Eight days after the operation it fell to below 100 and remained steady. Flatus was passed 41 hours after the operation and after giving calomel. Five grains of calomel in one-grain doses were given 24 hours after the operation, followed in 16 hours by a turpentine enema.

The bowels were then well moved. The bladder was catheterised for the first 12 days. There was no sugar in the urine. There was considerable suppuration along a suture track which had to be poulticed and fomented. There was slight hæmorrhage from the vagina during the first 36 hours. On the fourth day after the operation vaginal douches of boric lotion were given and were continued daily. Fluid diet was ordered as usual. The patient made good recovery and left the hospital nine weeks after operation, she and the child being quite well.

Notes from the Maternity Hospital.—The child, a female, was alive and weighed six and a half pounds. Development was premature. The condition of the child on dismissal was good. The bottle was the medium of nutrition. When the patient was examined on Nov. 10th the cicatrix was 12 centimetres (four and three-quarter inches) long. The uterus was high up and fixed to the abdominal wall. It lay a little to the left. The promonotory could be easily felt with the index finger.

CASE 9.—The patient, a married woman, aged 28 years, who had had two children, was admitted to the Maternity Hospital on August 3rd, 1900, her confinement taking place on August 16th and the date of her discharge being Sept. 22nd. Menstruation had begun at the age of 16 years. She had last menstruated in November, 1899. Quickening had taken place in April. The two previous pregnancies had resulted in delivery at full term; one of the children was stillborn and the other lived 24 hours. Labour in the former case had lasted 38 hours; in the second case, in which the forceps was employed and craniotomy had to be performed, it was of short duration and chloroform was used for three and a half hours. During her present pregnancy the patient had had good health. On examination she was found to be small and delicate—a rachitic dwarf. The nipples were rather flat. The height of the fundus was to the level of the ensiform cartilage. It was vertical and ovoid. The head of the fœtus was fixed in the brim, the back being to the left side of the mother and the limbs to the right side. A uterine bruit was heard. The fœtal heart was heard on the mother's left side. The cervix was dilated and the presentation was a vertex one. An enema and the catheter were used to the rectum and bladder. The pelvis, roughly estimated, was flat rachitic. Cæsarean section was performed on August 16th at 6 P.M., Dr. Lea and Dr. Scott assisting in the work. Ether was administered. The abdomen was opened in the middle line; the uterus was exposed, brought out of the wound, wrapped in hot towels, and incised. The child was removed. The placenta was removed without difficulty. The uterus was then sutured, and having contracted in a most satisfactory fashion was returned to the abdominal cavity, which in turn was sutured. There was no drainage. The vagina was packed with CHI_3 gauze for 24 hours. The child, a female, was alive and presented a small incision on the back. She was fully developed and weighed six and three-quarter pounds. The placenta was oval and its weight was one and a half pounds. The membranes were ruptured during operation. The patient was dismissed on Sept. 22nd, five weeks after the operation. There was one stitch abscess, but otherwise the wound healed well. The infant was kept on the breast for the first fortnight; then, as the mother's milk was not enough, she was lastly bottle-fed, and eventually was entirely dependent on the bottle. On the eighth day, as the pulse and temperature indicated some retention of decidua and its infection, Dr. Lea administered an intra-uterine douche. This was followed by a rigor, the temperature rising to 106° F.; after this, save for a temporary rise of temperature on the following evening, the patient made a good and steady recovery in spite of a small stitch abscess which developed near the lower end of the incision.

CASE 10.—The patient, a married woman, aged 26 years, the mother of six children, was admitted to the Southern Hospital on Oct. 4th, 1900. The diagnosis was one of pelvis contracted to a point under possibility of a viable child being born, and the pregnancy was at or near full term. The first child had been delivered dead at eight months. It was thought by the medical attendant to have been dead for some time. The second pregnancy resulted in the delivery of twins and a resort to craniotomy; the third and fourth in delivery at nine months and craniotomy; and the fifth at seven months with craniotomy. The anterior superior iliac spine measured nine and three-quarter inches, the crest 10½ inches, and the external conjugate six and five-eighths inches. Examination per vaginam made during convalescence showed a high degree of antero-posterior contraction. The urine when examined on Oct. 5th had a specific gravity of 1020, was acid, and contained no albumin or sugar. Cæsarean section was commenced under ether on Oct. 6th at 10.30 A.M. and completed at 11.30 A.M. without waiting for the onset of labour pains. The membranes were punctured before operation. An abdominal incision was made as usual, as also was a uterine incision. The indiarubber loop was thrown round the cervix and tightened on the removal of the child. The placenta lay in the fundus uteri and posteriorly. The child when removed breathed immediately. The uterus was sutured with silk and catgut—about 10 of each. In the abdomen silk and silkworm-gut sutures were used. The silk sutures of the uterus were passed to the margin of the endometrium and drawn very tight. With superficial catgut there was no attempt at sero-serous apposition. The wound, after oozing had ceased and the uterus had been kneaded, was rubbed with iodoform. No drainage was needed. The patient lost a considerable amount of blood per vaginam during the next hour and some clots during the afternoon. Ether pneumonia developed in two or three days. Digitalin was administered hypodermically at the end of a week. Aromatic spirits of ammonia and stimulants were given for the pneumonia. After the operation the patient was very restless. There was considerable hæmorrhage. One-fiftieth of a grain of ergotin was injected two hours after operation. Morphia was also given hypodermically and a rectal injection of 20 ounces of saline solution and two ounces of brandy was administered. The hæmorrhage still continued; pressure over the pubes and an icebag were applied. In three hours one-hundredth of a grain of ergotin and one-sixth of a grain of morphia were again injected. The hæmorrhage became less, but did not entirely stop. During the first 48 hours a bloodclot came away at intervals. The hæmorrhage then almost ceased, there still being some blood-stained discharge. Boric douches were given at intervals daily. On the evening of the day of operation bronchial symptoms set in. The patient did not complain of very severe pain after the first two or three hours, and the vomiting was slight. The temperature immediately after the operation was very low—96·8° F. It gradually rose and eight hours after the operation (10 P.M.) it was 101·2° and the pulse was 146. The temperature gradually fell to 98·2° by the following morning, but began to rise again, and in 48 hours after the operation it was 101·6°. It remained high (from 100° to 103·6°) for 18 days, and on the nineteenth day (Oct. 26th, 21 days after the operation) it fell to normal and remained steady. The pulse was rapid (from 146 to 104) from the time of the operation to Oct. 26th, when it fell to below 100. The temperature and pulse rose and fell together during the acute stage of the illness. The respirations were quick and laboured, varying from 28 to 44. In 24 hours after the operation they were 44. There was no pain in the chest. The expectoration was slightly "rusty" on the fourth day after the operation (Oct. 9th). The sputum was only "rusty" once; at other times it was "frothy." The patient did not expectorate freely. There was a slight cough. The wound was dressed for the first time seven days after the operation, when one deep suture was removed. There was some slight suppuration along the suture track. The wound was again dressed in two days, when there was very slight suppuration, which soon cleared away, and the wound healed quickly. The abdomen became distended, but there was no tension or tenderness on touch at any time. Flatus was passed 48 hours after the operation after the administration of five grains of calomel in one-grain doses at intervals of one hour, followed by a turpentine enema. In four hours the bowels were well moved and much flatus was passed. There was no further trouble with the bowels. The bladder was catheterised for 24 hours. There was no sugar in the urine. The patient had no abdominal symptoms. Suitable treatment for the broncho-pneumonia was adopted.

Note.—This patient was examined on Nov. 3rd. The abdominal cicatrix measured five and a quarter inches and the fundus uteri at the lower end of the wound was adherent, anteverted, as after ventrofixation, but otherwise normal; there was no perceptible exudation. The patient was discharged on Nov. 27th looking very well and the child was healthy.

General Remarks.

In addition to the points to which attention has been called in the special note under each individual case there are innumerable details with regard to surgical technique, after-treatment, &c., some "organic details," some less important, that it would be desirable to touch upon if time

permitted. It will be observed by the critical reader when this paper is printed that the nursing notes are given sometimes in considerable detail. This is done in the expectation of drawing criticism as to whether the after-treatment has been what Dr. Radford called "judicious"; of eliciting suggestions from the experienced in the operation with the object, not only of enabling the patient to escape with her life, but of producing favourable post-operation and convalescent stages and diminishing, as far as possible, the dangers and discomforts of the future.

The selection of the time of operation is a matter on which a good deal of difference of opinion appears to exist. In the majority of cases there can be little doubt that in the future, as at present and as in the past, we shall have no choice but to do the best we can with a patient already in labour for a longer or a shorter time. With regard to the time of operation there is a remarkable contrast between the practice of the present time and that of 50 years ago. The Cæsarean section was looked upon then as the last resort and a dire necessity. Then the operation was performed upon a uterus which had become completely exhausted by days and nights of labour; now when the operation is performed it is usually done without delay and the condition of the patient and of the parts to be operated upon are comparatively favourable. It might have been noticed that in two at least of the cases in this series arrangements were made for the operation to be done on a certain day and at a certain hour, just as if they had been cases of abdominal section for tumour. It has been objected that when this is done there may be danger from atony of the uterus. It is astonishing that such an objection should be raised in the face of our experience of induction of premature labour and emptying the uterus for what we believe to be sufficient reason at any stage of pregnancy whatsoever. Another objection, that the os will not be found sufficiently dilated, I believe to be also groundless, whether the patient be primipara or otherwise. The fewer manipulations of the uterus, especially per vaginam, the better, and I have seen no reason to suppose that dilatation of the cervix or the introduction of a cervical drainage-tube in a woman operated on before the onset of labour was at all necessary or even could be otherwise than injurious.

Whether it has been expressly stated or not in the notes, the incision of the uterus has invariably been postponed until the uterus could be drawn forward out of the abdominal wound, and an elastic tube has been always put round so as to be ready to compress the uterine vessels in case of emergency. The uterus has been kept warm by being wrapped in cloths wrung out of sterilised hot water and the bowels have been protected by a suitable packing of sponges. It may be objected that this requires a larger abdominal incision than necessary. When the membranes have ruptured the uterine mass is not so large as one might expect, but there is something in the objection when the membranes are not ruptured. In the last case when the operation was performed before the onset of labour the membranes were ruptured and the waters were drained off by means of a special instrument just before the abdominal incision was made. On the other hand, when the uterus is drawn forwards the operation can be completed with a cleanness and precision hardly attainable otherwise. When the incision of the uterine muscle is rapidly made it is wonderful how little blood is lost even when you come down upon the placenta. In the later cases the elastic tube has been drawn tight, if at all, only after the extraction of the child and the removal of the placenta and membranes. The objection that the use of the elastic ligature causes atony of the uterus is, in my opinion, frivolous. If the deep sutures are inserted as quickly as possible and tied pretty tightly it will usually be found that on relaxing the tube the hæmorrhage is inconsiderable. When the tube is being relaxed the uterus, which has been darkly congested, gradually assumes its natural red or pink colour. If by the time all the sutures are inserted and tied the uterus looks bulky it can usually be made to contract by manipulating it, not with the fingers directly in contact, but acting upon it through a suitable cloth.

As to the size of the wound in the uterus, it should be large enough to permit of the rapid extraction of the fœtus without laceration of the wall of the uterus. I have read and heard that the wound need not be more than four inches in length. As the true conjugate of the pelvis is more than that it may be inferred that a four-inch incision is an estimate, not a measurement as applied to the uterus in Cæsarean section. An added half-inch or more of a clean incision is a small matter compared with laceration of the uterus or asphyxia of the fœtus.

In recent years there has been a good deal of discussion, especially in Germany, on the position at which the incision into the uterus ought to be made, and many cases have been operated upon according to Fritsch's method—that is to say, with a transverse incision through the fundus of the uterus. I must say that to the best of my judgment there is little or nothing to be said in favour of this modification. The drawbacks with regard to the removal of the placenta and membranes are obvious enough, but there are much more important objections. The transverse "Fundusschnitt nach Fritsch" leaves the sutures that have closed the incision into the fundus uteri in such a position that the wound and the suture knots must come in contact with the bowels and omentum; such contact must result in adhesions with possible complications. But there is a worse objection than that; there is a danger that the fundus uteri will adhere to the parietal peritoneum before it has sufficiently undergone involution and cause discomfort by dragging upon the area of adhesion situated high in the abdominal cavity. Further, if the patient has not been subjected to operative proceedings in order to cause sterility the consequences of a future pregnancy must be deplorable. I am decidedly of opinion from experience of ventrofixation that wherever the incision is made the fundus uteri should be left free. When the uterine incision is made in the most obvious position, the middle third in front and in the median line, as involution goes on the uterine wound sinks down and comes in contact with and adheres to the abdominal wound. We then ultimately find the uterus—on examination a month or six weeks, or later, after the operation—just exactly in the position where it remains after a successful ventrofixation operation. If pregnancy occurs the fundus is free to rise and develop just as after ventrofixation in which the fundus is not bound down to the abdominal wall, and so normal pregnancy and parturition remain possible. With a line of firm adhesion between uterus and parietes a subsequent Cæsarean section must be a comparatively easy and safe operation. With increasing experience and confidence it was thought advantageous to abandon drainage.

I do not propose to discuss in full the indications for Cæsarean section and the alternative proceedings, but I should just like, among important points, to call attention to the fact that without having been explicitly condemned by any weighty expression of opinion the operation of symphyseotomy is dying out. Six years ago at the International Congress of Rome it appeared to be the most important and exciting subject under discussion in the Section of Obstetrics. Four years ago at Geneva one heard a good deal about it from Frenchmen and Italians; but now, apart from a few enthusiasts in Paris and in Italy nobody appears to practise it. It is an operation, if justifiable at all, only fit for a carefully arranged operation-room of a lying-in hospital. In this connexion permit me to call attention to a paper recently published in the *Monatsschrift für Geburtshülfe und Gynäkologie*,[3] entitled "Contribution to Symphyseotomy, relating to a Case of Induction of Premature Labour; Symphyseotomy; Perforation," by Dr. Oskar Gross in Breslau. The title is almost a sufficient summary of the case. The mother did not die. Dr. Gross, however, refers to three other cases, not his own, in which perforation had to be resorted to after symphyseotomy. Two of the mothers died and the third was 74 days in the hospital. The results, both as regards mothers and children, immediate and remote, are too problematic for the operation ever to gain a footing in private practice, and if this be true it should be banished from our hospitals. It has undergone several resurrections, which is a pity. I think it was von Winckel who suggested that the sooner it is finally laid in the grave alongside of gastro-elytrotomy the better for humanity.

Concerning the induction of premature labour, it has long appeared to me that the medical profession is dominated by hazy traditional views with regard to its indications and results. Few children are genuinely viable in the case of induction for the higher grades of contraction of the pelvis, although they may be born living. The mortality is appalling even when the best possible care is given to the newly-born infant. Is it evil tradition, or a want of imagination, or a talent for self-deception that makes such obstetrical histories

[3] Band xii., Heft 5, November, 1900.

as that of the patient in Case 10 possible at the end of the nineteenth century? In most cases it would be just as well to frankly resort to craniotomy as to bring on premature labour at 28 or 30 weeks, when the pelvis is so contracted that a genuinely viable child could not pass. From such experience as I have had myself, and from the information obtained by reading numerous statistics and case-contributions from many lands, I believe that it requires very exceptional conditions to make it a justifiable thing to bring on premature labour earlier than in 34 weeks. If you look at the indications for Cæsarean section and compare them with those for the induction of premature labour you cannot fail to be impressed with the shrinking of one and the expansion of the other.

On this subject of premature children Pinard presumes a fuller knowledge than the world possesses when he says: "Nous savons à la fin du XIXe siècle la signification du mot *prématuré*. Nous connaissons l'abîme qui sépare le prématuré de l'enfant à terme, et la différence d'avenir qui est réservée a chacun d'eux." Pinard has done much to add to our knowledge, as distinguished from our impressions, of the fate of premature infants. He refers to the portion of the Paris Maternité where premature infants are taken care of as "établissement modèle où rien n'a été épargné, ni la science, ni le dévouement, ni l'argent"; and what is the result? In 1897, out of 391 infants admitted 292 died within the average time of one month, that is, 70·4 per cent.; and in 1898, out of 482 admitted 343 died within the same average of time, that is, 71 per cent. The relative indications for Cæsarean section and craniotomy on the living mature fœtus would lead me too far afield. The subject is vastly too large for mere *obiter dicta*. One can only ask in half-despair, How long into the twentieth century will the obstetric art continue to act as procuress to invincible ignorance and brutish self-indulgence? Look once more at Case 10: craniotomy on a mature fœtus, craniotomy on twins, craniotomy after induction of premature labour at seven months—that sort of work throws into the shade the practice of an Egyptian midwife.

Manchester.

AN ACCOUNT OF THE EPIDEMIC OUTBREAK OF ARSENICAL POISONING OCCURRING IN BEER-DRINKERS IN THE NORTH OF ENGLAND AND THE MIDLAND COUNTIES IN 1900.[1]

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FOR the last 12 months I noticed, both in the medical wards of the Manchester Workhouse Infirmary and in the out-patient department of the Manchester Royal Infirmary, a considerable number of cases presenting unusual skin eruptions of a more or less indefinite character, such as erythema, keratosis, and pigmentation, the last being particularly common among the pauper patients. Some of the pigmented cases were diagnosed as Addison's disease by my assistants, but I could never satisfy myself that this diagnosis was correct. In June, 1900, about six patients presented themselves in one week who were suffering from the typical erythromelalgia or painful red neuralgia of Weir Mitchell, not only the feet but in some cases the hands also being affected; so marked were these cases that in June I gave a clinical lecture on the condition to the students of the Manchester Royal Infirmary. During the last seven months I noticed a remarkable increase in the number of cases of herpes zoster, which appeared to be in epidemic form and during this period I saw probably more cases than I had seen altogether in the past two years.

At the beginning of August quite an extraordinary number of cases of so-called "alcoholic paralysis" were admitted into the workhouse hospital, principally among women. So-called alcoholic peripheral neuritis is a fairly common disease in the Manchester district, very much more common, as I understand, than in London and the south, and perhaps I may be excused for saying that we are specially well acquainted with the affection, for it was principally owing to the work of our physicians, Dr. J. Dreschfeld and the late Dr. J. Ross, that such excellent descriptions were given to the medical world. By it we understand a peripheral neuritis associated with paræsthesiæ and numbness in the hands and feet, paralysis of the arms and legs, cramps of the muscles, and especially great pain on pressure of the muscular masses of the limbs; in addition, there is frequently a dilated left heart with cardiac muscle failure and marked œdema of the trunk and legs and often albuminuria; very rarely, indeed almost never, is there any affection of the cranial nerves. In some cases there is an almost characteristic mental condition with loss of memory for time and place. It may be at once mentioned that the only forms of peripheral neuritis associated with great muscular pressure and pain are the alcoholic, the arsenical, and that form found in beri-beri. By "alcohol paralysis" or neuritis in this paper I mean *so-called* alcoholic paralysis or neuritis.

This great increase in the number of cases of alcoholic neuritis was noted by many observers, some of whom thought that it was due to increased drinking owing to the war fever or to a wrongful expenditure of the money given by the charitable towards the war funds. There was at the beginning of November no longer any doubt that a serious epidemic existed not only in Manchester and Salford but also in neighbouring towns. Now, rightly or wrongly, and this is a matter far too large and important to discuss in this paper, I have for many years doubted whether ethylic alcohol *per se* does cause peripheral neuritis at all, and I have personally felt more confirmed in this opinion each succeeding year. I was therefore in the present epidemic not content with the alcoholic theory but was at once on the look-out for some other possible cause of the neuritis. I could not at first find a satisfactory explanation, but at any rate I confirmed a previous opinion[2] that in this district alcoholic neuritis only occurred among beer-drinkers, not amongst pure spirit-drinkers. Then we noticed at the workhouse that the peculiar skin lesions already mentioned in passing were very often found in the patients who were suffering from neuritis; secondly, a few cases of beautiful herpes zoster were found in the neuritic cases. Thereupon I remembered that arsenic was the only known drug which produced herpes, and so if there was any known drug acting as a poison in the beer it was almost certainly arsenic.

Improbable as this hypothesis at first seemed, yet it was a valid hypothesis, for it was not known to be untrue; it explained all the facts and it was easily capable of proof or disproof. This hypothesis I imagined on Nov. 15th, 1900. On Nov. 17th I obtained some of the beer most commonly partaken of by the sufferers and on Nov. 18th by Reinsch's test I easily obtained a deposit on the copper foil and driving this off in a combustion tube I got well-marked crystals of arsenious oxide, and thus the hypothesis became a fact.

Source of the arsenic.—On speaking to Dr. H. A. G. Brooke about the skin lesions he told me that he was treating a young London hop merchant for similar eruptions, and by his kindness I saw the patient with him and we found that he had undoubtedly got slight arsenical poisoning, although he took very little beer; but he frequently chewed hops, and we concluded that the sulphur with which the hops were treated would be found to be the source of the arsenic. This was soon found, however, not to be the cause of the present epidemic, especially as so little hops are used in making cheap beers. I have, however, been informed that the sulphur is often contaminated with arsenic, and in this way hops on the market often yield a reaction, showing the presence of traces of arsenic, thus accounting for the symptoms in a gentleman constantly tasting them. I communicated my discovery of the arsenic to Professor Dixon Mann on Nov. 19th and on Nov. 20th he examined a different sample of beer and also found arsenic. He informed Professor S. Delépine, who was, unknown to me, also investigating the epidemic at the request of Mr. C. H. Tattersall, the medical officer of health of Salford, and he on Nov. 22nd traced the arsenic to certain sugars used in brewing. These were invert sugar, made by the action of sulphuric acid on cane sugar, and glucose, made by the action of sulphuric acid on various forms of starch. It was easy to see that the sulphuric acid was the common source of the arsenic, and

[1] A paper read before the Royal Medical and Chirurgical Society on Jan. 8th, 1901. An abstract was published in THE LANCET of Jan. 12th.

[2] See Medical Chronicle, June, 1890, p. 189.

on being examined large quantities were found, the original source being the Spanish pyrites from which the sulphuric acid is made and which often contains a very large percentage of arsenic. As it happened the brewing sugars from one firm only were found to be thus contaminated, but as this firm supplies no less than 200 breweries in the north of England and midland counties it will be seen how widespread the epidemic was likely to be.

Quantitative analyses.—By the kindness of Professor Delépine I am able to give some interesting quantitative determinations, the arsenic being estimated as arsenious oxide. Various beers were found to contain from two to over four parts per 1,000,000—that is, from 0·14 to 0·3 grain per gallon. The invert sugar contained 0·25 part per 1000, the glucose 0·8 part per 1000, and the sulphuric acid no less than 1·4 per cent., or four ounces per gallon.

Other sources of arsenic.—From a legal and commercial point of view these results are of the highest importance, but from a scientific point of view it is equally important to know that traces of arsenic may get into beer from other sources. I have already mentioned that it is contained in sulphured hops; it is also found in many samples of malt, getting there either from sulphur or from anthracite coal; it has been found by Dr John Brown of Bacup in the vulcanite tubing used for conveying the beer to the pumps. Again, calcium bi-sulphate and sulphuric acid are used in "fining" the beer, and also, I believe, for cleansing the barrels. Another point worth recording is that many artificial manures are contaminated with arsenic. A possible explanation of the manner in which arsenic may be retained in beer during the various processes and may be of peculiar virulence is that according to the researches of Selmi, Hamberg, Sanger, Saccardo, and others,[3] certain micro-organisms, especially aspergillum glaucum, mucor mucedo, and penicillium brevicaule, seem to have a special tendency to seize hold of any arsenic in their vicinity and to manufacture specially poisonous arsenical products. This has so far been worked out more particularly in connexion with arsenical wall-papers, but, as Dr. R. T. Williamson[4] points out, it is very desirable that further researches on these arsenio-bacteria should be made.

Extent of the epidemic.—Although the epidemic seems to have fallen most heavily on Manchester and Salford and the vicinity, yet many more distant towns in the north of England and the Midlands have been affected—wherever, indeed, the contaminated brewing sugars were used. Thus we hear of outbreaks in Liverpool, Chester (where the cases were associated with so much heart failure and so little pigmentation that they were diagnosed as beri-beri), Warrington, Heywood, Bacup, Preston, Lancaster, Penrith, Ilkley, Leicester, Stourbridge, Lichfield, and Darleston.

Although very many thousands of people have probably been affected, yet it is impossible to say how many and equally impossible to give the number of deaths. For the epidemic had been in existence for nearly six months before anything except alcohol was suspected as the cause; many cases were treated as rheumatism, others as gastritis or diarrhœa, large numbers simply for the skin eruptions, and many merely as cases of chronic alcoholism. Some patients only had slight symptoms and did not have medical attention, while in others the cardiac and hepatic symptoms were the important features. But some idea may be obtained from certain statistics obtained by Dr. J. Niven, medical officer of health of Manchester, and Mr. Tattersall, medical officer of health of Salford. The former in response to a circular received information from 90 practitioners and came to the conclusion that there had been up to the end of November in Manchester only at least 2000 cases. Investigating his death tables, and including deaths certified as due to neuritis, alcoholism, or cirrhosis of the liver for the first 10 months of the years 1897, 1898, 1899, and 1900, he found them to amount to 172, 141, 188, and 253 respectively. In Salford Mr. Tattersall found that in the four months from the end of July to the end of November, 1900, there were 41 cases of death certified as due to neuritis and 25 as due to alcoholism; this total of 66 contrasted with 22 in the first seven months of the year, 39 in the whole of 1899, 31 in 1898, and 27 in 1897.

SYMPTOMATOLOGY.

1. *Complaint of patient.*—In answer to the usual question "What is the matter with you?" the patients have complained of one or more of the following symptoms: pains in the feet, hands, and limbs, burning in the soles of the feet, tingling and "pins and needles" in the fingers and toes, shooting neuralgic pains in the trunk and limbs, difficulty of walking, weakness in the hands and legs, rashes on the body, frontal headache, running of the eyes and nose (cold in the head), bronchitis and hoarseness, a "tired-out" feeling, shortness of breath, swelling of the feet, vomiting, and diarrhœa.

2. *Aspect.*—The aspect of most of the patients is so typical that their cases can generally be diagnosed at sight, not only as they come into the out-patients' room, or lie in bed, but as they walk about the streets of the city. The face is puffy, especially about the eyelids. The eyes are suffused and watery and sometimes running with tears, in some cases the conjunctivæ being œdematous and the vessels so congested that at first sight there appear to be sub-conjunctival hæmorrhages. The colour of the face varies from crimson to a dusky red or even a copper colour. The voice is often "husky," sometimes intensely so, and the walk is that of a patient with very sore feet, so that they seem afraid to put the foot to the ground, or it is somewhat unsteady, or else there is the "high stepping" gait from paralysis of the dorsal flexors of the ankle; in many cases the gait can be diagnosed merely by the noise of the footfall on the ground, the "double-rap" step, as I call it, the heel coming down first, quickly followed by a sudden (not gradual, as in health) descent of the anterior part of the foot and so making the second rap. The patients very frequently are found to be rubbing the fingers together because of the numbness and tingling.

3. *The skin lesions.*—These are very numerous, and almost invariably present in some form or other in greater or less degree. (*a*) Erythromelalgia. This condition, described as "painful red neuralgia of the extremities" by Weir Mitchell, or "acrodynia" by older observers, was one of the commonest lesions. The soles of the feet are crimson, as if stained with red ink, sometimes the whole surface, but more generally only where the surface touches the ground, so that there is left a normal appearance on the inner side at the hollow of the foot and also a transverse line just beyond the distal extremities of the metatarsal bones. The sole, and often the whole foot, is bathed in perspiration which may be stinking (but this is rare). The skin is also puffy even if no true dropsy is present. On the palm the redness may again be uniform but again more frequently it is most marked on the thenar and hypothenar eminences and on the palmar surfaces of the terminal phalanges, the centre of the palm being normal in colour; the whole palm is wet and may be actually pouring with sweat. Both soles and palms are tingling and burning hot and painful, and these signs are greatly intensified by heat, so that the patients cannot sleep unless the feet are exposed to the air outside the bedclothes.[5] The pressure of the bedclothes cannot be borne and the surfaces are exquisitely painful on pressure, so that, as I have said, the gait is affected, and the patients cannot use the hands even if no paralysis is present. This erythema does not become pigmented, but passes on to keratosis. (*b*) Keratosis. This condition seems to be a somewhat late manifestation and is at any rate very frequently secondary to the erythema and hyperidrosis of the palms and of the soles. I have watched it develop on the hands and feet and can thus speak with some certainty. It may take several forms, it may be in a few isolated scaly masses, either thin or very heaped up in marked prominences, and in this way previous corns on the feet or patches of tylosis on the soles or palms become extraordinarily prominent. In some cases the keratomatous patches appear on the dorsum of the hand between the webs of the fingers and on the knuckles. In more marked cases either the whole palm or sole is thickly covered with large white or dirty grey scales which are constantly being shed into the bedclothes; or the centre of the palm and inner side of the sole may be merely erythematous and dry but not covered by scales. Sometimes the keratosis extends up to the ankles and on to the wrists, but the scales are now not thick but more like a branny desquamation. The palms and soles may both be affected, but the soles are almost always the worst, and sometimes are affected alone. Moreover, in cases where

[3] Allbutt's System of Medicine, vol. ii., p. 989.
[4] Brit. Med. Jour., Dec. 1st, 1900.

[5] Rarely the patient says his feet are very cold, but on examination they are found to be hot.

there is no pigmentation keratosis may be present and forms a most valuable aid in the diagnosis of a case which might otherwise appear to be merely one of alcoholic paralysis. The process is very slow (many weeks) in its development and seems to be if untreated extremely chronic. (*c*) Erythemata. These are very varied in character and are often accompanied by great irritation. There is sometimes a scarlatiniform eruption on the upper part of the chest spreading to the neck and face, sometimes on the forearms and rest of the body. At other times, and perhaps most frequently, it is a morbilliform rash on the trunk and limbs running into scarlatiniform patches; often it is a more distinctly papular erythema and not infrequently there is an acute urticaria. In some the change is so intense that there is a vesicular eruption in which the lesions may vary in size from that of a pin's head to large bullæ several inches in diameter; those which I have seen have been almost always on the limbs. In one or two cases the appearance has been that of a true pemphigus, and when the contents have been shed circular marks have remained, like very superficial scars. These vesicular eruptions are probably a late form of rash, even coming on six weeks after the last glass of beer has been taken. The erythematous papules sometimes become larger, run together, and are covered with scabs in patches, so that there may be after many weeks an appearance somewhat like lupus or even of superficial syphilitic ulcerations. (*d*) Pigmentation. This is generally not present in light-complexioned patients or merely amounts to a darkening of pre-existing freckles. In darker people it is practically always present in greater or less degree, but in many is so diffuse that it may entirely escape notice. In most of the cases it follows (after many weeks) the erythematous blush, which gradually turns from red to copper-colour, then to bronze, and in severe cases almost to black, so that many of the patients resemble mulattoes. Even if it is thus almost universal it does not affect the palms and soles nor, as a rule, does it touch old scars in which the deeper layers of the skin have been destroyed, but round the edge of the scar it is much intensified, the scar thus seeming to be of an especially white character. Round the neck, in the armpits, round the nipples, on the abdomen, round the genitals, and on the buttocks, where there has been pressure, as round the waist or under the garters, it is much deeper in tint and, indeed, resembles the pigmentation of Addison's disease; but I have not seen any pigmentation of the mucous membrane of the mouth. Although well seen on the face of many patients yet on the whole it is more marked on the trunk. Frequently the pigmentation shows well-marked lighter spots like "rain-drops." In other cases the pigmentation is seen on close examination to be punctiform. In others it is in isolated spots varying in size from a pinhead to patches equal in size to the palm of the hand, clear light-coloured skin intervening, and often these isolated patches run together to form a continuous pigmentation. Not only is the colour like that of a mulatto but the texture of the skin takes on the same beautifully soft velvety feel to the touch, quite different from that of normal English skin. In many cases after many weeks a branny desquamation of the pigmented skin takes place, so that by friction one can rub off the pigmentation as it were and leave healthy skin underneath. Having watched numbers of these cases for weeks I am convinced that there is a distinct sequence of events — namely, an erythema followed by pigmentation and then a desquamation—so that the pigment is really a part of the general altered nutrition of the skin and is not due to a deposit of metallic arsenic in the skin as was once thought; this view does not necessarily exclude the idea that the drug may be partly eliminated by the skin. (*e*) Herpes zoster. This was the tell-tale eruption which, as I have said, gave me the key to the puzzle. When it occurred without any other very definite symptoms, then I considered that I was dealing with epidemic specific herpes, but when I found other signs of arsenic poisoning present there could be no doubt that it was also arsenical in origin. Since the discovery of the arsenic practically every case of herpes zoster has been found to have other unmistakeable signs of arsenic poisoning in greater or less degree. I have seen rarely herpes of the fifth cranial nerve, a few cases of the ascending branches of the cervical plexus, several of the other cervical nerves, many of the dorsal nerves, and one of the first lumbar nerve. In no case has the herpes been bilateral and generally only one nerve-root was affected, but in two cases I have seen two succeeding nerve-roots affected; I have seen no herpes below the elbow or below the knee. From the great number of cases seen in this district there is to my mind no longer any doubt that arsenic causes herpes by a direct action on the posterior spinal ganglion, just as much as it acts directly on the motor and sensory nerve fibres; this seems to me to be a much more probable view than that put forward by Dr. H. Head, that arsenic is only a remote cause of herpes, inasmuch as it renders a person more liable to attack by specific herpes. In fact, how many of the epidemics of so-called specific herpes (such as that described by Dr. Head as occurring in 1897 during the long drought that lasted from July to November) have not really been due to arsenical poisoning? From actual therapeutical observation I have seen a few cases of herpes develop when I have been giving small doses of arsenic in which the only other sign of arsenical poisoning was lacrymation and a silvery tongue. I am indeed convinced that it may come on with quite small doses. The herpetic eruptions have always been preceded and accompanied by very severe neuralgic pains along the course of the nerve or nerves affected. And I may here state that I have had many cases with severe neuralgic pains in the arms or round one side of the trunk which I expected would be followed by herpes, but none appeared. (*f*) Nails. In many cases the nails are affected. After the patients have stopped taking the beer for some weeks the best appearances are seen, for then there is a transverse white ridge across the nail; proximal to this the nail is normal, but distal to it the nail is whiter, cracked, thin, and towards the tip almost papery and much flattened. In some cases there have been a series of parallel transverse ridges on the nails almost suggesting a series of week-end "drinking bouts." These deformed nails of course break easily. (*g*) Loss of hair. One or two women have told me that they have lost the hair during the attack, but this has certainly not been a marked feature.

4. *Nervous system.*—(*a*) Sensory affections have been present in practically all the cases. In the mildest they have merely consisted of paræsthesia and tinglings and burning and pricking sensations in the fingers and toes; in others these conditions have been combined with numbness of the hands and feet and sometimes of the legs below the knees. I have not seen a case of *total* loss of sensation, although the numbness has been very pronounced. Part of the apparent loss of power in the hands and feet has been due to this partial loss of sensation. In one case there was very marked, but not total, anæsthesia of the whole left fifth cranial nerve, but its motor fibres were unaffected. This is the only instance in which I have seen any affection, either sensory or motor, of the cranial nerves. Neuralgia of the arms or trunk, either followed or not by herpes, I have already alluded to. Finally, and of the greatest diagnostic importance, there was in a large number of the cases (but only if there was some loss of power) tenderness on pressure of the muscular masses of the legs and arms; sometimes deep pressure was required, but in other cases light pressure produced most exquisite pain and caused the patients to scream out and to exhibit a very typical facial expression of terror or in less marked cases merely a screwing up of the facial muscles in a "grin of pain." (*b*) Motor. These symptoms were similar to those ordinarily found in so-called alcoholic neuritis. They were present in greater or less degree in about 70 per cent. of the cases. In the slighter cases there was only slight loss of grip and slight affection of the gait, and there was then no appreciable atrophy of the muscles. In more marked cases there was a total paralysis of the affected muscles with very marked atrophy. The small muscles of the hands, especially the interossei, the muscles of the forearms, especially the extensors, and in severe cases all the muscles of the arm, were involved. If the muscles of the upper arm were not affected then also the supinator longus escaped to a large extent, as in lead-poisoning. In the early stages in the feet there was loss of power with some slight irritation of the extensors of the toes, so that the great toe was well extended and "cocked-up." In this stage the knee-jerk was always either present or exaggerated, but there was never any ankle clonus. But soon the muscles became paralysed and atrophied, first the interossei and the anterior tibial and peroneal groups, so that the toes were flexed and the whole foot dropped at the ankle into a position of talipes equino-varus. The calf muscles were next affected and at about the

same time those of the thigh, accompanied, of course, with rapid wasting and loss of the knee-jerks. The superficial reflexes were normal or exaggerated. Even in this stage the muscles on the front of the trunk were weak, so that the patients could not raise themselves in bed, and in some advanced cases there was well-marked diaphragmatic paralysis, with laboured breathing and a markedly ineffective power to cough. In one case with comparatively slight loss of power in the limbs the diaphragm was entirely paralysed. It goes without saying that in the most advanced cases the patients lay in bed totally helpless. There was no paralysis of the sphincters except in the most marked cases, in which some of the incontinence was possibly due to the mental condition, and the intercostal muscles were never paralysed. I never saw any paralysis of the cranial nerves in any case. The walk I have already described as a "stepping" gait, but many of the patients were distinctly incoördinate in their movements, and swayed slightly on standing with the eyes closed, but to my mind there was never any real resemblance to the ataxic walk of a case of tabes. (*c*) Mental. In many of the cases of advanced paralysis there was the peculiar mental condition commonly found in alcoholic paralysis. This has been called "confusional insanity," but it is more accurately described as a total loss of memory of time and then of place. There is a loss of initiation of ideas, but any suggestion, however absurd, is at once accepted. Thus a totally paralysed patient who has been in bed for weeks when asked if he has not been for a walk this morning will say that he has and will tell you with much circumstance where he has been; and when asked about yesterday will perhaps say with a little prompting that he has been to the seaside. If asked when he came into hospital, he will always turn towards the nurse at the other side of the bed and say: "Let me see, I think it was yesterday [or some other near date], wasn't it, nurse?" But, taking only the paralysed cases, I am inclined to think that the amount of mental confusion has been distinctly less than I should have expected from as many cases of ordinary alcoholic paralysis, which rather leads me to think that arsenic has not much effect on the cerebral cortex.

5. *Circulatory system.*—In the majority of the patients there has been some heart failure. In the milder cases this has been limited to dyspnœa on slight exertion, palpitations, post-sternal or epigastric pain, and a low tension pulse. In more marked cases the heart muscle has shown great failure and the left side of the heart has been dilated, the apex-beat has been in or outside the nipple line, and the left border not infrequently outside the nipple line; the beat was sometimes diffuse. On auscultation the heart sounds have approached the fœtal "tic-tac" type, the second sound being accentuated and the diastole shortened to the length of the systole; in some cases there was a soft systolic mitral murmur. Exertion has increased the pulse-rate considerably and there has sometimes been a rapid heart without accompanying fever. So great has been the cardiac muscle failure that several patients have fainted on getting up for the first time, and undoubtedly the principal cause of death has been cardiac failure; this has been noticed as the chief cause of death in arsenical poisoning by Brouardel in the Havre epidemic in 1888 (homicidal poisoning). Œdema affecting merely the feet only or almost the whole body has been observed in 25 per cent. of the cases. On the trunk it may manifest itself by the skin taking and retaining the impression of the stethescope over the heart. There is often a well-marked pad of œdema over the sacrum, and the genitals are sometimes enormously œdematous. The legs may have such a tense, hard œdema that it is difficult to make an impression on them with the finger. There has been a fair amount of ascites, but no great amount of pericardial or pleuritic effusion, certainly not so much as is said to occur in beri-beri. In the Chester cases there seems to have been an unusual amount of heart failure and œdema. Both from the cases which I have seen and from those reported in other epidemics I have no doubt that arsenic will seriously affect the heart muscle quite independently of alcohol.

6. *Respiration.*—Just as the skin is irritated by the arsenic so the respiratory mucous membrane seems to be in its whole course. There are in the early stage running from the eyes and nose, congestion of the fauces, a very marked congestion and thickening of the vocal cords producing the typical hoarse or husky voice (not due to any paralysis, as I have proved by laryngoscopic examination), and very pronounced bronchitis. Not infrequently there has been hæmoptysis in patients who were certainly not suffering from phthisis. Not a few of my cases have shown signs of phthisis with fairly rapid breaking down of the lung tissue. And it is interesting to note at the present time, when arsenic is being largely recommended for the treatment of phthisis, that some of our patients with signs of rapid phthisis give a history of apparently previous phthisis which has seemed to be in abeyance but has been lighted up in a virulent form by drinking the arsenicated beer.

7. *Digestive system.*—In many of the cases digestive troubles were the first signs; although loss of appetite was present in severe gastric cases, on the contrary in mild cases the appetite seems to have been definitely increased. There was, of course, no blue line on the gums in any case, but in a few the gums were red and softened. The tongue in the early stage had a typical thin white silvery coat, as if it had been brushed over with lunar caustic. In later severe stages it was brown, but as a rule it was moist. Vomiting, quite sudden and very copious, was a marked feature, sometimes occurring immediately after each pint of beer taken or immediately after a meal. Many patients came to the hospital suffering from sensory disturbances and said that they were spirit-drinkers only, but on inquiry I found that they had been beer-drinkers a few weeks previously, but had voluntarily stopped the beer because it was not "agreeing" with them, as they were so sick, and this occurred before it was known that arsenic was present in the beer. Some patients complained of diarrhœa, and as these cases occurred in October and November I was quite at a loss to explain the cause, especially as they had not as yet shown other signs of arsenical poisoning, although they were obviously alcoholics. In a few cases there has been passing of blood by the stool, but whether this was secondary to congestion of the liver or to ulceration of the intestine I cannot say. At the work house hospital during the last six months we have had quite an unusual number of cases of cirrhosis of the liver (this organ being much enlarged, hard, and tender), with great ascites. Dr. A. C. Sturrock, the resident medical officer at the Manchester Royal Infirmary, has noticed the same increase there.[6] Brouardel has also mentioned cirrhosis of the liver in pure cases of arsenical poisoning, and I cannot doubt but that arsenic will set up an interstitial hepatitis.

8. *Urine.*—In a considerable number of cases there has been a trace of albumin in the urine, but quite possibly this has been secondary to the cardiac failure. In many cases this disappears later, so that I have no evidence to prove that there has been renal cirrhosis. We have not found any sugar in the urine. But a more interesting and important fact is the presence of arsenic in the urine of those patients who had been drinking quite recently. Professor Dixon Mann on Nov. 26th obtained the arsenical reactions quite easily from only six ounces of urine passed by a woman who had been recently drinking, and its presence in the urine has also been detected by Dr. J. H. Abram and Dr. Nathan Raw[7] and others. There is no doubt also that the arsenic is excreted by the milk, as I was informed by a mother who was affected that her suckling child vomited after each meal (which had never been the case with any of her previous children). Mr. G. S. Taylor of Salford[8] reports also a clear case of the suckling infant being affected.

9. *Temperature.*—In the early stages in several cases the temperature has been raised, varying from 101° or 102° F. in the morning to 102° or 103° in the evening, the other signs of early arsenical poisoning being fairly acute. In some cases this pyrexia has disappeared after a week or 10 days in bed; in other cases it has lasted two or three weeks, and in a few it has continued until death. Thus in the early stages in previous epidemics there has been some excuse for the cases having been diagnosed as influenza or even as typhoid fever.

Summary of symptoms and order of sequence.—From the above account it is clear that arsenic is almost certainly a cumulative poison although some authors say that it is not so. Moreover, it is a poison which affects both the skin and the respiratory and digestive mucous membranes, the nerve trunks, both sensory and motor, and the muscles (including the heart muscle), and the liver. As regards the sequence of the symptoms Brouardel[9] has clearly laid them down and I can confirm his statements. The sequence is: (1)

[6] Brit. Med. Jour., Dec. 22nd, 1900, p. 1815.
[7] Ibid., Dec. 8th, p. 1683.
[8] Medical Press and Circular, Dec. 5th, 1900, p. 585.
[9] Annales d'Hygiène, 1889, p. 479.

digestive symptoms; (2) laryngeal catarrh, bronchitis, and acute skin symptoms; (3) disturbances of sensibility; and (4) motor paralysis (and pigmentation and keratosis). Widal in the Hyères epidemic gives the following actual dates in one of his cases: Feb. 8th, gastric disturbance and diarrhœa; March 4th, acute cutaneous eruptions, spasmodic cough, running of the eyes and nose; March 31st, sensory disturbances in the limbs, then some days later paresis of the upper and lower limbs. Health was only restored after one year.

The course of the disease is a slow one. The gastric, coryzal, and laryngo-bronchial symptoms pass off first, then the acute skin lesions, which pass on to the chronic skin lesions, which, I think, will be found to last many months. The erythromelalgia and sensory symptoms are still almost as marked as ever in patients whom we have had under observation for four or five months, and judging from analogy of so-called alcoholic paralysis the motor disturbances will last for from 18 months to two years before they entirely disappear.

Mode of death.—In most of the cases this seems to be from cardiac failure, either quite suddenly or gradually. Some patients have died from paralysis of the diaphragm with secondary broncho-pneumonia, and in one case at least phthisis contributed to the fatal issue.

Classification of cases.—The cases may be roughly divided into groups: (1) those with all symptoms fairly well marked; (2) those with skin lesions principally; (3) those with cardiac and hepatic lesions principally; and (4) those with paralytic lesions principally. A careful examination into the history and present state of any case will, however, reveal some concurrent symptoms quite characteristic of arsenical poisoning. Thus in a fair-complexioned woman who had no apparent symptoms but paralysis, which could not be diagnosed from so-called alcoholic paralysis, there was in addition keratosis of the soles of the feet.

Diagnosis.—Once the possibility of arsenic poisoning is recognised there is no difficulty whatever in diagnosis. There is no other disease which will produce the same grouping of symptoms. In the early stages it is possible to mistake the condition for measles or scarlet fever and in the later for Addison's disease, and in some cases it will be difficult in the present state of our knowledge to say that certain cases cannot be entirely explained by chronic alcoholism. Only a thorough consideration of the history and full examination of the patient will prevent mistakes being made. In beri-beri there are said to be but few skin lesions.

Treatment.—I shall say little on this point, for having entirely stopped the intake of the poison, the treatment becomes merely a matter of dealing with symptoms. One point, however, is of great importance; on account of the alarming heart symptoms from muscle failure no depressing drugs should be given. We must thus avoid potassium iodide, sodium salicylate, antipyrin, exalgin, phenacetin, &c. Small doses of digitalis, with some other diuretic, tonic doses of strychnine, gastric sedatives, carbonate of ammonia, and senega, will probably be required. For the pains we must have recourse to small doses of morphia. The burning sensation in the hands and feet is much relieved by spirit lotion. The other skin lesions must be dealt with *secundum artem*, but this is a subject which I would rather leave to the dermatologists. The treatment of the neuritis does not differ from that which is already well known.

Previous epidemics.—Space will not allow me to do more than mention some previous epidemics of arsenic poisoning. Graves[10] mentions that he had witnessed part of the curious "*épidémie de Paris*" which occurred in 1828, in which there were peripheral neuritis, acrodynia, and many other of the symptoms which I have above described. There can be little doubt that this was an epidemic of arsenic poisoning. I have been unable to find Chomel's original paper, but Barthélemy[11] says, also, that it appears to have been due to arsenic and that in four or five months it caused the deaths of 40,000 persons on the western bank of the Seine near Paris. Brouardel and Pouchet[12] call attention to an epidemic affecting nearly 500 persons at Hyères in 1888 and reported by Widal, in which white arsenic had by mistake been put into wine instead of gypsum; also an epidemic at Havre in 1888 in which 15 persons were affected from arsenic put intentionally into food. Brouardel also alludes in passing to an epidemic, which he had investigated, from arsenic in bread,[13] and I have seen a statement made, but cannot confirm it, that in 1884 in the Département du Midi (France) some wine sold was found to contain a considerable quantity of arsenic which was derived from the sulphuric acid with which the old wine barrels had been repeatedly washed, whereas the same wine which had been stored in new barrels was quite free from the poison.

Pathological anatomy.—This subject I do not intend to allude to, as it is being investigated by others. In the few cases in which I have been present at the post-mortem examinations the only prominent signs were the interstitial hepatitis and the dilated flabby heart.

Personal statistics.—During the three months—October, November, and December, 1900—I had charge at the Manchester Workhouse Infirmary of 343 patients suffering from arsenical poisoning, 192 being men and 151 women. During November and December at the Manchester Royal Infirmary (out-patient department) I treated 157 patients similarly affected, 99 being men and 58 women. This gives a total of 500 cases, 291 being men and 209 women. This preponderance of men over women is contrary to what I supposed at first was the case, but the symptoms were on the whole more pronounced in women. The deaths were 13, five of men and eight of women. The ages varied from 26 years to 70 years and either beer or porter was invariably taken as a beverage, alone or together with spirits. The amount taken has varied from as small a quantity as two pints (possibly only one and a half pints) to 16 pints a day. The herpes was more common in men, for out of a total of 21 cases seen in three months 16 were in men. The heart symptoms with anasarca and the liver enlargement and cirrhosis with ascites were also more common in men. But the gastro-intestinal, the coryzal, and the sensory and motor disturbances were more common in women and as a rule were shown in a much more marked degree. In 80 cases in which specially careful notes were taken seven women out of 37 had marked loss of memory of time and place, but only one man out of 43 was thus affected. Also of these 37 women 27 were suffering from loss of power, 10 of them to such a degree that movement of the much atrophied limbs was practically impossible. Of the 43 men 17 had loss of power, the loss being of a total character (in the limbs) in six cases. In all the cases of paralysis the legs were more affected than were the arms.

Manchester.

[10] Clinical Lecture, New Sydenham Society's Transactions, vol. i., 1834, p. 578.

[11] Nielson's article in New Sydenham Society's Transactions, vol. clxx., p. 237.

[12] Annales d'Hygiène, 1889, vol. xxii.

[13] At St. Denis, where 280 were affected.

CASES OF ARSENICAL PERIPHERAL NEURITIS.

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FOR the past four months I have been interested in the number of persons presenting themselves at the out-patient rooms of the Stanley Hospital on my days of attendance who exhibited symptoms of neuritis in various ways. In two cases, both those of women, there were large outbreaks of herpes zoster of the intercostal variety and in another case, that of a man, there was herpes zoster distributed from the buttock down the posterior surface of the thigh; in the cases of the females the skin of the abdomen and back was of a pale umber colour. Other patients complained particularly of peculiar pains in the hands and feet and on examination their cases were diagnosed as cases of peripheral neuritis probably due to alcohol. In the case of two patients particularly who confessed to having taken small quantities of beer, and that only at meal times, the possibility of lead as a cause was considered, but there were no special diagnostic symptoms to support it, and yet it was difficult to understand how the alcohol alone could have been the sole cause of, and could have produced, such marked symptoms, for none confessed to spirit-drinking. There is no doubt now, however, that these cases were the outcome of arsenic in the beer and I thought it would be of interest to describe briefly some of the more characteristic features noted.

CASE 1.—A married woman, aged 42 years, came complaining of pains and numbness in the hands and feet with

difficulty of walking. She stated that she never had any previous illness. For some months she had noticed a difficulty in going upstairs. Since about the middle of August she had suffered from intermittent attacks of coryza and gradually increasing numbness in the fingers which interfered with her work as a cigarette-maker. She had suffered more or less with diarrhœa for two years, but since August she had had attacks of vomiting and griping pains with six or eight loose motions daily. Pain in the soles of the feet preceded by cramps in the calves and thighs came on at about the same time that the fingers were affected; the legs, feet, and hands were swollen and the finger left an impression on the swollen legs; the face also was œdematous. The patient's senses of taste and smell were almost completely lost. Her complexion had gradually become "pasty and sallow" and her skin very dry and "mealy." Her condition on examination was as follows. The face was pale and sallow and was rather puffy, with a mask-like appearance; the cheeks were pigmented, with clear spots as if the bronze colour had been washed off; and the eyelids were very dark. There was bronzing, extending down the neck and becoming darker near the axillæ; the nipples were very dark and the abdomen had the same umber colour; and the skin was desquamating like fine bran. The skin of the hands was peeling and dry on the palms, with the palmar lines looking like streaks of flour, and the nails were brittle, while the tissues around them were swollen and shiny. The patient stated that her hands felt tense and that her skin felt like a tightly-fitting glove. The fingers were anæsthetic, which was most marked in the thumb and gradually lessened to the little finger, which was very slightly affected—the anæsthesia had travelled from the thumb to the index and middle fingers in sequence, then after a short interval to the ring finger—and there was fine tremor of the hands. The anæsthesia did not extend over the wrists nor were the arms tender on pressure. On holding a cup, if she exercised sufficient pressure to retain it, it caused pain in the fingers. There was marked loss of contour of the legs and slight œdema; the skin was dry and scaly, but there was no pigmentation. The feet dropped and the arches were almost obliterated as in flat-foot; the skin was blue and shiny, there was acute tenderness of the soles and, on pressure, over the nerves of the leg, with general hyperæsthesia. The knee reflexes and the plantar reflexes were absent. There was not much wasting and paresis was not very marked. She could raise herself on her toes and flex the ankle against slight resistance. There were no ataxia and no headache and the memory was good. The tongue was white, flabby, and silvery in appearance. There was no pain after food and the appetite was good. She was suffering from diarrhœa with straining and soreness, which she stated was as if she had "piles." The motions were fluid and frothy; they contained no blood but considerable quantities of mucus. There was occasional vomiting. The urine did not contain albumin or sugar. The pulse was 102, small and irregular. The heart-sounds were weak, with the first sound reduplicated occasionally and like the second in character. She stated that she had taken only three glasses of beer per diem and that it was always procured from the same public-house. Two weeks later (on Dec. 2nd, 1900), when she had given up taking the beer, all diarrhœa, vomiting, and coryza had ceased and the œdema had almost disappeared. On the 4th the urine was examined for arsenic but with a negative result. Only a small quantity, however, was obtainable for the purpose.

CASE 2.—The patient was the husband of the woman in Case 1. He had had similar gastro-intestinal symptoms with coryza while taking the beer, and had become pigmented, but exhibited no symptoms of neuritis. These symptoms disappeared on his discontinuing the beer.

CASE 3.—The patient was a female, aged 63 years. The symptoms commenced early in August, 1900, but for a month previous the woman had noticed weakness of the legs on going upstairs. She had had attacks of vomiting and diarrhœa with colic—six motions during the day and four during the night; the motions were jelly-like but contained no blood. There was marked watery discharge from the eyes and nose but no sore-throat. The skin became dry and scaly and for six weeks she had had pains in the feet with increasing difficulty in walking and some staggering, and two weeks later the pains came on in the hands. The pains were always worse at night while in bed. While attending as an out-patient for three weeks her symptoms increased, and on Nov. 15th she was admitted into the hospital, her condition on admission being briefly as follows. The patient was a fairly well-nourished woman. Her hair was turning grey; her skin was dry, scaly, and very pigmented, especially over the abdomen, the chest, and the back, in parts subjected to pressure, and in the axillæ and inner sides of the thighs, fading towards the legs, the arms, and the face. Pigmented patches were present on the temples and at the roots of the hair on the forehead. The skin was desquamating freely all over, especially on the back and on the sides also on the calves. On the dorsum of the hands and feet the skin was glossy and bluish, while on the palms and soles it was dry and peeling; the nails were brittle. The heart sounds were weak and "fœtal" in character, the first and second sounds being of similar character. The pulse was 108, small, and collapsing. The nervous symptoms consisted of pain in the intercostal regions with a marked girdle pain at the lower part of the thorax. There was acute tenderness over the nerves of the legs on pressing the calves, causing her to scream; and the same tenderness was present in the soles of the feet; it was not present in the arms but was marked in the fingers. There were anæsthesia and excessive sweating of the fingers, which followed upon shooting pains. She was unable to feed herself, there being great loss of power in the hands, and she was prevented from standing by loss of power in the legs. There was well-marked hyperæsthesia of the skin of the feet. The knee plantar reflexes were absent and there were flail ankles. The abdominal reflexes were absent. The pupils reacted to accommodation and light. The wasting of the arms and the legs was considerable. The patient slept badly and her memory was slightly impaired for recent events, but there was no delirium or incoherence of speech. The appetite was poor; there was no pain after food, but the patient had diarrhœa. The tongue was shiny and white. The urine did not contain albumin or sugar. The patient confessed to drinking only two glasses of beer daily but no spirits. She had obtained her beer from the same public-house for seven months, previously to which she had not experienced any symptoms.

CASE 4.—The patient was a female, aged 60 years. She came to the hospital complaining of weakness of the legs and the hands for the previous three months. Six months before she had had sneezing and watery discharge from the eyes and nose which lasted for six weeks, and there had since been intermittent attacks. There was no vomiting or diarrhœa. Pains in the soles of the feet and in the ankles had developed and increased during three months. There were suffusion and redness of the conjunctivæ, and the skin of the face was darkly pigmented, the pigmentation increasing over the neck, the chest, the back, the armpits, the shoulders, the buttocks, the thighs, and the abdomen, fading towards the arms, the hands, the legs, and the feet; in places it appeared as if it were splashed with rain. In the most pigmented parts the skin was almost like that of a negress. Exfoliation was very marked, the exfoliated epidermis appearing white in contrast to the general bronzing. The finger nails were brittle and the nails of the great toes were loose. The hair had fallen off very considerably. Pains with numbness and anæsthesia were noted in the fingers. The patient had severe pain in the feet; she stated that she could not bear the weight of the bed-clothes upon them. The soles were exquisitely tender, also the nerves of the leg, pressure eliciting screams. The skin of the feet was hyperæsthetic up to the ankles. The knee and plantar reflexes were absent; there were no ataxic symptoms. The digestive system had not been affected. The tongue was smooth and silvery looking. The heart sounds were altered so that the first sound was short and sharp but feeble. The pulse was 102 and almost imperceptible. The woman acknowledged having taken only "two gills" (= three glasses) of beer daily, and she had always obtained it from the same place.

CASE 5.—The patient was a female who complained of hoarseness and cough which had been coming on for three months, also the rapid enlargement of a previously small goitre, with pain and numbness of the hands and feet. She first noticed that a short walk made her tired and that her legs felt "heavy." The hoarseness and bronchitis had gradually developed, with a constant sense of irritation in the throat. For a month she had a discharge from the eyes and the nose like clear water. Her skin had become very brown, but it was clearing; it had "come off," she said, "like oatmeal and in flakes," especially from the hands and feet. When the patient was seen by me on Dec. 7th the

pigmentation was very marked and the face was dusky, the general distribution of the pigmentation being as in Case 4. On the back was a patch of erythema about eight by ten inches, sharply defined, and exhibiting dermographia on friction. When her initials were scratched upon it they stood up as wheals in bold relief. The pigmentation faded towards the hands and feet. The tongue was silvery and exfoliating. The patient had suffered from purging with tenesmus and smarting, but had passed no blood by the bowel. She attributed this to the beer she had taken, which always gave her a burning feeling in the chest and stomach. There was great tenderness on pressure over the nerves of the legs and also on the soles of the feet, with hyperæsthesia. The knee and plantar reflexes were absent; there was no ataxia, no wasting, and no marked paresis. Examination of the chest revealed general bronchitis. The heart sounds were rather feeble, but there were no murmurs. Exertion caused dyspnœa. The pulse was 96, small, soft, and regular. Menstruation had increased, and the last period had been excessive. The thyroid gland was much enlarged, more on the right side than on the left. There was no pulsation or murmur, the increase in size having been recent. The gland had never caused her any trouble before but had become a source of much discomfort. The patient took "sixpenny" beer with her meals, three glasses per diem.

CASE 6.—A man, aged 47 years, complained that his right hand felt "asleep," with a feeling of "pins and needles." For a week his legs had become weak and numb and as if he were "standing on ice." He could not work owing to the weakness of the legs. He had had coryza for two weeks and he had also had looseness of the bowels for the same time. The skin was dry and scaly and the nipples were very brown. There was a pigmented macular eruption on both sides of the body, the buttocks, and the thighs; on the latter it was in long streaks following scratching. There was a separate patch on the right buttock two and a half inches square, and one on the abdomen. The face was dusky and expressionless. The man had difficulty in picking up pins with his right hand as he could not feel them. There was a feeling of "pins and needles" in both legs, with slight superficial anæsthesia, but great pain on pressure over the calves and the soles of his feet. The knee and plantar reflexes were absent, but the paresis was not pronounced. There was slight ataxic gait on walking with the eyes shut. There were no mental symptoms. The pulse was 86. The heart sounds were normal. The tongue was pale and silvery, but there was no gastric disturbance. The patient confessed to taking two glasses of beer at night but no stout, and he said that he always got his beer from the same public-house.

CASE 7.—A man was admitted into the hospital complaining of loss of sensation in the arms and legs; he said that on standing or walking he felt as if a round ball were under the sole of each foot. He had been in the habit of drinking beer but not to excess, and he very seldom drank spirits. His illness commenced in October, 1900, with "cold in the head"; he had also vomiting and diarrhœa. On walking he experienced pain in the calf muscles; weakness of the legs below the knees developed, and later the hands and arms became affected. He had gradually lost weight. The pigmentation of the skin was not very deep in colour with the exception of the axillæ, the groins, and the nipples. The skin was dry and desquamating in fine powdery scales; the skin of the hands and feet was shiny and bluish. The finger-nails had each a well-marked transverse ridge, indicating in period of growth the approximate date of the initial trophic disturbance. There were no special symptoms in the alimentary system. The pulse was 72 and of low tension. The heart sounds were feeble and distant but there was no bruit. There was slight general bronchitis with cough. The patient slept fairly well; there were no headache and no mental disturbance. He walked with difficulty and with a "stepping" gait. There was marked hyperæsthesia of the hands and the forearms, also of the feet and the legs. Pressure over the nerves in the calves caused great pain. The soles of the feet were very tender on pressure. There was marked wasting of the muscles of the arms and legs, with loss of contour in the limbs, loss of power, and "drop foot." The patellar reflexes were absent and the plantar reflexes were diminished. There was no œdema. The specific gravity of the urine was 1005; it was acid but there was no albumin or sugar.

The above series of cases exhibited a characteristic train of symptoms; other cases, however, in which there was sufficient reason to attribute the symptoms to the same cause were less typical and varied in severity. The following may be taken as examples.

CASE 8.—A woman, after three years' abstinence from liquor, took it in excess for two weeks. Violent vomiting, diarrhœa, and depression ensued. The tongue was furred and the mouth and gums were ulcerated and painful. The pulse was 120 and was very feeble. The heart sounds were "fœtal" in character. There were pains in the hands and calves, with great tenderness on pressure. The knee and plantar reflexes were exaggerated.

CASE 9.—The patient was a man who had always been in the habit of drinking from four to five pints of beer daily but who had never experienced any ill effects until the end of November, 1900, when he suffered from severe gastro-intestinal symptoms and coldness and feelings of numbness in the hands and legs. When seen in the out-patients' room he was extremely depressed, with pronounced tremor, and was continually hawking up mucus from the throat. There was great pain on pressing over the nerves of the legs. The face was puffy and the skin was dry. There was no pigmentation. The patellar reflexes were exaggerated and the plantar reflexes were diminished. The pulse was 160, very small. The heart sounds were "fœtal" in character. The face was puffy.

CASE 10.—The patient, a man, suffered from œdema of the legs with pain on pressure over the nerves. The knee-reflexes were diminished. There was also anæmia. There was no pigmentation. Slight gastro-intestinal symptoms were present. The pulse was irregular, small, and frequent. The heart sounds were feeble.

CASE 11.—The patient was a man, showing pigmentation and fine desquamation round the waist, in the armpits, in the groins, and in the nipples. There were hoarseness and bronchitis but no gastro-intestinal disturbance. Pain and tenderness of the sole of the right foot were also present. The right knee reflex was absent and the left knee reflex was normal.

CASES 12 and 13.—These cases were those of two females who showed herpes zoster of the right side of the trunk with intercostal neuralgic pain. They had also pains in the hands and in the feet, with pigmentation of the trunk.

CASE 14.—This was the case of a man who had herpes zoster of the right buttock extending down the thigh to the ham.

CASE 15.—This was the case of a man who suffered severe urticaria, with pains in the arms and the legs. The urticaria disappeared with the discontinuance of the beer. Several days later on taking beer a fresh outbreak was precipitated.

CASE 16.—The patient was a female who had had coryza for two weeks. There were four loose motions daily. She suffered from great thirst. There were numbness in the hands and occasionally in the legs and pigmentation of the sides of the trunk. The skin was dry and desquamating particularly over a large area on the left side of the trunk. The tongue was clean, fissured, and glistening. The pulse was 80, regular and small. There was a systolic mitral murmur.

In the majority of instances I was able to locate the establishments at which the patients had procured their beer and I felt justified in notifying without delay the names and addresses of the patients and the establishments to the medical officer of health of the city.

Liverpool.

THE ROENTGEN RAYS AND THE DIAGNOSIS OF URINARY CALCULI.

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WITHIN the last few weeks I have had under my care a series of cases which illustrate in an unusual degree the value of the Roentgen rays in the diagnosis of renal, ureteral, and vesical calculi. Thanks to the improvements in technique which have been effected in the course of the last two years the results obtained by Roentgen photographs may, so far as calculi are concerned, be regarded as final and conclusive for all ordinary cases. Unless there is some unusual difficulty, such as an abnormally stout abdomen

or, as in one of my cases, an extreme lumbo-dorsal curvature, displacing and burying the kidney, the Roentgen rays can be relied upon to give definite and accurate information not only as to the existence of a calculus but as to its size, its exact position, and, what is even more important, whether there are other calculi present either in the same or in some other part of the urinary tract. There need, therefore, be no fear lest, as has happened before now, an operation should be performed by some mischance upon the wrong organ or on the wrong side. The best results, of course, are obtained with calculi composed of oxalate of lime, as these absorb the rays to a much greater extent than others, but even concretions of phosphate of lime can be made to throw a distinct shadow, unless they are so minute as to be of no practical importance, and a negative result can be relied upon as much as a positive one. If no calculus is shown after a second examination, repeated under varying conditions, it may be taken as certain that there is no calculus there. Out of eight cases radiographed by Lennard of Philadelphia in which the result was negative on subsequent examination nothing was found in seven cases. In the eighth case it was known at the time that the technique was faulty and that no reliance could be placed upon the result.

In many instances Roentgen photography is the only method by which the presence of a fixed calculus can be ascertained. I have published elsewhere[1] a case in which I removed a small cortical calculus from the right kidney of a patient who had had his appendix removed nine months before by another surgeon without deriving the least relief. As usual in the case of a cortical calculus there were none of the characteristic symptoms of stone in the kidney. The stone was fixed and never came into contact with the orifice of the ureter, so that there was no renal colic, or hæmaturia, or retraction of the testis, but merely constant aching pain referred to the right iliac fossa and made worse by every attempt at exertion and attended by a feeling of sickness. A single exposure revealed the cause, and with the removal of the calculus the pain ceased entirely.

Even when there is no doubt as to the existence of a calculus the assistance derived from this method of investigation is scarcely less valuable, especially in the case of renal calculi. In another patient of mine, who was under the care of Dr. J. G. Ogle of Reigate, the clinical symptoms were so definite that the diagnosis of stone in the kidney was practically certain; but nothing could be ascertained about the size of the calculus, or its position in the kidney, or whether there might not be more than one, hidden away, perhaps, in one of the calices. A single examination with the Roentgen rays proved beyond all question that there was only one stone and that it was fixed in the cortex and at the lower end of a particularly low-placed kidney. In consequence of this I was able to extract it through the smallest possible incision and with a minimum amount of manipulation. Had it not been for the skiagram it would have been necessary to have exposed the whole kidney, and to have palpated it thoroughly, perhaps even to have dragged it out of the wound on to the loin, first to find the stone, and then to make sure that there was no second stone present.

When the stone has left the kidney and is passing down the ureter the condition of the patient, as a rule, is such that quiet examination is not possible. In one case, however, in which the course of the stone was temporarily arrested just below the brim of the pelvis, I obtained definite information both as to its presence and its exact locality. Fortunately, under active purgation, it soon began to move on again, and it was ultimately passed without any operative measures being required. Had it remained fixed where it was the information would have been of the utmost value in determining the exact situation for the incision. In two cases of suspected ureteral calculus under my care, in which the evidence given by the Roentgen rays was negative, the subsequent course of events proved that it was perfectly correct. In one case it was thought that there might be a calculus impacted in the lower end of the ureter, as, in addition to other symptoms, there was a peculiar prominence of the mucous membrane of the bladder just behind the orifice of the ureter and visible through the cystoscope, but on examination nothing was found. In the other case the patient, who had suffered from repeated attacks of colic down the left side of the abdomen for some months before and in whom the left kidney was unusually sensitive to pressure, died suddenly from acute intestinal strangulation a fortnight after the skiagram had been taken, and the kidney and ureter were found at the post-mortem examination to be perfectly free.

Under ordinary circumstances the Roentgen rays are not required in cases of vesical calculus. The diagnosis is easily made with a sound, aided, especially in children, by the introduction of the finger into the rectum; but there are many cases of enlargement of the prostate in which this method fails completely. Stone in the bladder is much more common in association with enlargement of the prostate than is usually believed, and is very often overlooked. Sometimes the stone lies in a definite sacculus and sometimes it is merely caught behind the prostate and held by it against the trigone. In either case, however, it never comes into contact with the neck of the bladder, it never gives rise to the characteristic symptoms, and it is exceedingly easy to miss with a sound. There may be pain, it is true, but it is not the characteristic sharp cutting pain of stone in the bladder, felt at the end of the penis, and coming on as the last few drops of urine are expelled. Micturition may be unduly frequent, but the frequency is either more marked during the night than during the day or else is so extreme that such exercise as the patient can take makes little or no difference. Blood is often present in the urine, but more often than not it precedes or accompanies the flow instead of following it; and though the stream of urine often stops before the bladder is emptied, it is not arrested with that abruptness and sudden pain which characterise the dropping of a calculus into the neck of the bladder and the sudden spasmodic contraction of all the muscles around it. It often happens in these cases that the only indication of the presence of a calculus is the obstinate persistence of cystitis which resists all ordinary measures; and I am strongly of opinion, from the frequency with which I have found calculi present, that whenever this persistence is a prominent feature in association with enlargement of the prostate a special examination for calculus should be made without further delay. The severity of an attack of cystitis depends upon the kind and number of the septic organisms that get in and upon the conditions which favour their growth. Persistence in the face of treatment thoroughly carried out points to some lasting cause which is much more often a calculus than is usually imagined.

Now in many of these cases the prostate is so large, partly from over-growth and partly from long-continued congestion, that the ordinary methods of examination are useless. A sound, if it can be introduced and rotated in the bladder, cannot be made to explore the post-prostatic pouch or any sacculi that have been formed without an amount of manipulation that is often most injurious. A cystoscope frequently cannot be introduced at all, and owing to the length of the prostatic urethra the finger in the rectum cannot lend the least assistance. Hence it is that under these circumstances even large calculi may be overlooked. But with the Roentgen rays there is no difficulty. Without putting the patient under an anæsthetic, without passing anything up the urethra, without causing pain or even inconvenience, without the least risk of hæmaturia, or septic cystitis, or shock, an examination with the Roentgen rays will prove within the course of a few minutes whether a calculus is present or not, no matter what may be the size or shape of the prostate or how distorted the bladder. Not only can the presence of a calculus be shown, but very valuable information can be obtained as to the size, number, locality, and sometimes even composition. The shadow of the calculus is projected on to the plate with that of the coccyx. (The patient must lie upon his back, as the prone position is only suitable for moveable calculi.) Making allowance for the fact that the coccyx is somewhat nearer to the plate a fairly approximate idea can be obtained as to the size of two of the diameters of the calculus. No direct information, of course, can be obtained as to that of the third. The stone may be disc-shaped and not thicker than a penny—not an unusual shape in cases of this kind—or it may be spherical. In either case the area of the shadow would be the same. If, however, the shadow on the negative is distinctly lighter than that of the coccyx, in spite of the latter being nearer the plate, it can only mean either that the stone is of considerable thickness, or that it is composed of oxalate of lime, or both. The actual size, however, and the hardness of the calculus are not so material under these conditions as is its position. The material point is that a calculus is present, either behind the prostate or in a sacculus, that it cannot be reached by a sound, and that therefore it is no use trying

[1] Archives of the Roentgen Ray, November, 1899.

to crush it by means of a lithotrite introduced through the urethra.

There is no need for any exceptional apparatus. It is usually recommended that the tube should be one of low vacuum, as the object is to obtain differentiation rather than penetration. In order to ensure shortness of exposure under these conditions the wattage of the secondary circuit must be high and the amount of the discharge sufficiently large. For this reason a coil giving a 10-inch or 12 inch spark answers better than a static machine. But I have known excellent results to be obtained, even in the case of the kidney, by very short exposure with a decidedly hard tube—and where the patient is very stout the tube must be hard. What is important, is not to obscure the differentiation obtained in the first few minutes' exposure by allowing too much penetration subsequently. The bowels must be cleared out thoroughly. All clothing containing foreign bodies likely to cast a shadow must be removed from the area to be examined. As a rule the patient should be placed in the recumbent position, with the plate, supported by a stout board beneath him, and an aluminium screen between the body and the tube. If it is wished to take a skiagram of the whole urinary tract at once the plate must be large enough to reach from the last dorsal vertebra to the lower part of the pelvis, but it is often better, when there is any doubt, to take two exposures, one of the kidneys and the upper part of the ureter, and the other of the lower part and the bladder.

One of the chief difficulties is the patient's breathing. The kidneys move up and down during even tranquil respiration to a much greater extent than is usually believed. They are not by any means immoveable organs, as anyone who has ever exposed a kidney during life must know. The patient cannot hold his breath for a sufficient length of time. The plan recommended by Mr. Mackenzie Davidson of making him hold his breath with the thorax fixed in a certain predetermined position, for short periods, at frequent intervals, and only allowing the exposure to take place at those periods, answers fairly well but requires a very careful patient. A more satisfactory plan is either to direct the patient to take very shallow breaths, or, better still, to put a firm bandage around the abdomen. This fixes it in a position of expiration and has the additional advantage of slightly raising up the opaque mass of the liver. The respiratory movement is less when the patient is sitting upright, but this advantage is more than compensated for by the way in which the abdominal viscera descend and conceal the kidneys. In the case of a very prominent abdomen the prone position, with the plate beneath, has been recommended instead of the supine position, with the idea that the abdomen would be flattened out to the sides and the kidneys brought nearer to the plate. I have had no experience of this, or of distending the stomach with carbonic acid gas—a plan which has been suggested as possibly of service in the case of the left kidney, under the impression that the more opaque viscera would be to some extent lifted from off it in front. Distension of the bladder with air in the case of a fixed vesical calculus is certainly of use, and provided the air is sterilised first, and due regard is paid to the sensations of the patient, it may be practised with no more danger or unpleasantness than that which attends the process of washing out the bladder.

The negative must be allowed to dry before any conclusion is drawn; and, if there is any doubtful spot, should be intensified with corrosive sublimate. Unless everything is certain a second examination should be made after a few days' interval, and if there is any doubt then a separate exposure should be taken of the area in question, a leaden plate with a circular opening exactly opposite the anode being interposed between the tube and the patient, so as to cut off as far as possible all extraneous rays and obtain a better defined shadow. I prefer plates in all cases to flexible films, as the latter are very liable to stretch when handled and give misleading results; but in such a case as that which I mentioned above in which there was an extreme lumbo-dorsal curvature they may be the more suitable in spite of this disadvantage.

Wimpole-street, W.

BRISTOL MEDICAL CHARITIES.—The employés of Messrs. W. D. and H. O. Wills of Bedminster, Ashton Gate, and Redcliff-street, have during the past 12 months voluntarily collected the sum of £389 18*s.* 11*d.*, which has been distributed amongst the Bristol hospitals and medical charities.

UROTROPINE AS A URINARY ANTISEPTIC

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EARLY in the year 1899 my attention was drawn to the effect produced by urotropine on the urine of a patient under the care of Dr. S. J. Gee in St. Bartholomew's Hospital. In the course of an attack of enteric fever he had developed cystitis, and his urine, which was markedly turbid from the presence of numerous typhoid bacilli and pus, had become quite sterile and clear after some six or seven doses of the drug. Subsequent observation showed that although many cases of cystitis arising from causes other than the typhoid bacillus were also markedly benefited by treatment with urotropine it was not invariably so. This led me to investigate the action of the drug on various micro-organisms and to attempt to determine the form in which it was excreted and the manner of its action in the urine.

Although urotropine or hexamethylene-tetramine ($C_6H_{12}N_4$) has long been known to chemists as a white crystalline body produced by the action of ammonia on formaldehyde it had not been employed therapeutically until Professor Nicolaier of Göttingen introduced it in 1894 as a diuretic and solvent of uric acid. He further claimed that it would prevent the development of bacteria in the urine.[1] On attacking the subject experimentally I first endeavoured to discover what effect urotropine had on the urine of a normal individual. For this purpose a healthy adult male was selected and the daily output of urine collected and measured for three weeks. Each day it was quantitatively examined for urea, uric acid, chlorides, phosphates, and sulphates. The specific gravity, reaction, and number of acts of micturition were also noted. The results obtained in the first and third weeks were only used as a standard with which to compare those of the second week, in which 10 grains of urotropine dissolved in an ounce of water were taken three times a day. During the whole course of the experiment the conditions as to food and exercise were kept as nearly as possible constant. It was found that the drug had not any diuretic action nor was any appreciable change in the excretion of the chemical constituents of the urine observed. Urotropine was found in the urine 10 minutes after the first dose was taken and it still continued to be excreted in small quantities 26 hours after the administration had been discontinued. One curious effect produced by the drug was a sensation of formication, which appeared on the fourth day and was most intense at night and in parts pressed on by clothing, &c. It became more intense each day and on the sixth day a diffuse red rash, somewhat like that of measles, appeared. Both rash and irritation quickly subsided after the urotropine was stopped. Usually urotropine is well borne, although Nicolaier speaks of 90 grains a day causing blood and epithelial cells to occur in the urine and a burning sensation to be complained of in the bladder. The urine passed during the first and third weeks on standing was found to quickly decompose, but that of the second week, which contained urotropine, remained clear and free from smell for more than four times as long.

All investigators are agreed that much of the urotropine taken by the mouth is passed unchanged, but there is considerable divergence of opinion as to whether the antiseptic properties of the urine are due to the drug itself or to some decomposition product arising from it. It is natural to suppose that if the latter is the case it is the formaldehyde which is set free to exert its well known bactericidal powers. Löbisch, Casper, and A. Citron have stated that formaldehyde can be obtained from the urine, at any rate in most cases, but the last-named suggests that the active body is not free formaldehyde but a soda compound of it.[2] Free formaldehyde added to urine precipitates the urea and has been suggested as a means of estimating it. Further, the

[1] Nicolaier: Centralblatt für die Medicinischen Wissenschaften, 1894, and Deutsche Medicinische Wochenschrift, 1895.

[2] Löbisch: Wiener Klinische Wochenschrift, 1897, No. 12. Casper: Deutsche Medicinische Wochenschrift, 1897, No. 45. Citron: Monatsberichte über die Gesammtleistungen auf dem Gebiete der Krankheiten der Harn- und Sexual-apparate, Band iii., No. 2, 1898; and Therapist, May 14th, 1898.

characteristic smell of formaldehyde can never be detected in the urine of persons who are taking urotropine.

In working at the effects of urotropine on micro-organisms the bacillus typhosus, the bacillus coli communis, and the staphylococcus pyogenes aureus were employed. Active broth cultures of each of these organisms were prepared and one cubic centimetre added to nine cubic centimetres of a urotropine solution made up with sterile water and contained in a sterilised test-tube. Six strengths of urotropine were used—viz., 10 per cent., 7·5 per cent., 5 per cent., 2·5 per cent., 1·25 per cent., and 0·63 per cent. The 18 preparations thus obtained, together with three control tubes of one cubic centimetre broth and nine cubic centimetres water, were all incubated at 37° C. for 24 hours. At the end of that time they were searched in a good light for signs of growth and a specimen of each examined under the microscope. Sub-cultures of all the tubes into sterile broth were then made, and these, together with the original cultures, returned to the incubator. After a further period of 24 hours the examination of the original cultures was repeated and a similar process gone through with the sub-cultures. This proceeding was continued for 10 days. Cultures were also made containing the acid urine of a patient who was taking 10 grains of urotropine three times a day. Of this one, two, three, five, seven, nine, and 14 cubic centimetres were mixed with one cubic centimetre of active broth culture and the tubes in the first five cases made up to 10 cubic centimetres with sterile water. A third set of cultures containing formaldehyde 1·0 per cent., 0·5 per cent., 0·1 per cent., 0·08 per cent., and 0·04 per cent. were also made. These, as well as the preparations containing urine, were treated and examined in the way described above. The results are shown in the following table:—

	Control broth.	Formaldehyde.					Urotropine.						Urotropine urine, 30 grains a day.						
		1·0 per cent.	0·5 per cent.	0·1 per cent.	0·08 per cent.	0·04 per cent.	10·0 per cent.	7·5 per cent.	5·0 per cent.	2·5 per cent.	1·25 per cent.	0·63 per cent.	14 c.c.	9 c.c.	7 c.c.	5 c.c.	3 c.c.	2 c.c.	1 c.c.
	Hrs.	Hrs.	Hrs.	Hrs.	Hrs.	Hrs.	Hrs.	Hrs.	Hrs.	Hrs.	Hrs.	Hrs.	Hrs.	Hrs.	Hrs.	Hrs.	Hrs.	Hrs.	Hrs.
Bacillus typhosus. Culture	24	—	—	—	—	—	—	—	—	48	24	24	—	—	—	—	24	24	24
Bacillus typhosus. Subculture ...	24	—	—	—	—	—	—	—	48	24	24	24	—	—	72	48	24	24	24
Bacillus coli communis. Culture	24	—	—	—	—	—	—	—	24	24	24	24	24	24	24	24	24	24	24
Bacillus coli communis. Subculture ...	24	—	—	—	—	—	—	24	24	24	24	24	24	24	24	24	24	24	24
Staphylococcus pyogenes aureus. Culture	24	—	—	—	—	24	—	—	48	24	24	24	24	24	24	24	24	24	24
Staphylococcus pyogenes aureus. Subculture ...	24	—	—	—	—	24	—	48	24	24	24	24	24	24	24	24	24	24	24

NOTE.—In the above table the times 24 hours and 48 hours, &c., refer to the interval which elapsed between the preparation of the cultures and the first appearance of turbidity due to the growth of the micro-organisms.

Taking first the results produced by the urine, it will be seen that both bacillus coli and the staphylococcus pyogenes aureus grew well in the 14 cubic centimetre mixture, but that the typhoid bacillus was killed by 9 parts in 10. More dilute solutions, seven cubic centimetres and five cubic centimetres, were sufficient to prevent growth in the original culture, but that the bacillus was not dead, only inhibited, was shown by the slow growth which occurred in sub-culture. The series of experiments made with a simple urotropine solution showed that 7·5 per cent. killed the typhoid bacillus completely. The same strength prevented the growth of the bacillus coli communis in the original culture, but a perceptible growth had occurred in a sub-culture in 24 hours. A similar result was obtained with staphylococcus pyogenes, only the growth in subculture was delayed 48 hours. In a 5 per cent. solution no growth of the staphylococcus was seen until 48 hours had elapsed, and a similar result was obtained with a 2·5 per cent. solution in the case of the typhoid bacillus. Urotropine alone therefore in strong solutions appears to kill micro-organisms, but weak solutions only inhibit their growth—i.e., are kolyseptic. These experiments also bring out the varying susceptibility of different bacteria to the action of urotropine. The typhoid bacillus is much more susceptible than the bacillus coli and the staphylococcus pyogenes aureus. This is borne out by clinical experience. A few doses of urotropine will clear typhoid bacilli from the urine with ease and certainty, but the bacillus coli requires a longer and more vigorous course of treatment. The inhibitory action shown by urotropine is more markedly possessed, at least in the case of bacillus typhosus, by the urine passed by a person who is taking urotropine by the mouth. Formaldehyde in a 0·04 per cent. solution was found to be sufficient to kill both bacillus typhosus and the bacillus coli communis. A 0·08 per cent. solution was, however, required to destroy the vitality of the staphylococcus pyogenes aureus. None of the inhibiting action shown by urotropine and urotropine urine was observed in the case of formaldehyde. From these experiments it seems probable that the effects produced clinically in cystitis by urotropine are not due to free formaldehyde, but either to the urotropine itself or to some body closely allied to it.

It now remained to be seen whether formaldehyde could be obtained from the urine of patients taking urotropine; and secondly, to determine the condition under which it was liberated. In carrying out these experiments the following tests for formaldehyde were employed; (1) the pink colouration produced in a solution of resorcin in sodium hydrate; (2) Schiff's reaction (a pink or violet colour produced in a solution of rosaniline hydro-chloride decolourised by sulphurous acid); and (3) Fehling's solution.

Taking first a 12½ per cent. solution of urotropine in distilled water it was found that on heating it on the water bath with a strong acid (e.g., sulphuric) formaldehyde was liberated after from two to three minutes' boiling; with phosphoric acid the same result was obtained but more slowly; and with a 10 per cent. solution of caustic soda a faint reaction was given after half an hour. It was noticed, however, that boiling the urotropine solution itself for about half an hour also caused some decomposition with the liberation of traces of formaldehyde. In order to reproduce more nearly the conditions which obtain in the body, solutions of urotropine, urotropine with dilute sulphuric acid, urotropine with phosphoric acid, and a solution of urotropine to which dilute sodium hydrate had been added, were placed in small corked test tubes provided with a delivery tube which dipped below the surface of the test solution placed in a shallow dish. These, together with a control preparation of the indicating solution, were put into the incubator and left for 24 hours at 37° C. At the end of that time the test solutions connected with the tubes containing urotropine alone and urotropine with sodium hydrate were unchanged, the acid solutions had produced some change, which was, however, but slightly marked in the case of phosphoric acid. The test-tubes were now boiled on the water bath. With the acid solutions a marked intensification of the colour was quickly noticed, but with the urotropine and alkaline solution of urotropine only a feeble change was observed after about half an hour. The same methods of procedure were adopted with a normal acid urine to which urotropine and

the substances mentioned above had been added. On boiling it was found that the solutions to which acids and alkalies had been added gave off formaldehyde in about the same time as the corresponding watery solution, but that the mixture of urotropine and urine reacted more quickly than urotropine alone. In the incubator similar results to those of the first set of experiments were obtained and on subsequent boiling the only difference was the rapidity with which the acid urine decomposed the urotropine mixed with it. The acid urine of a patient who was taking 30 grains of urotropine a day was submitted to the same tests. By boiling the urine a formaldehyde reaction was obtained in about 20 minutes, dilute alkalies delayed the result for half an hour, but with acid it was well marked in from two to three minutes. On incubation no colouration of the test solution was found to have occurred except with the acid solutions. By boiling this colour was soon much more marked, but it was 20 minutes before the urine alone produced any change and about half an hour before the alkaline mixture gave evidence of the liberation of formaldehyde. Fehling's solution is readily reduced by formaldehyde, even in very dilute solutions, but is not affected by urotropine if the boiling is not too prolonged. A patient whose urine was known to be free from sugar was placed on urotropine 10 grains three times a day and the drug shown to be present in his urine by the abundant orange precipitate produced with bromine-water. On boiling a sample of this urine with Fehling's solution no reduction took place, showing that it did not contain free formaldehyde. By distilling an acid urine to which urotropine had been added formaldehyde was liberated and passed over in the distillate, as was shown by various tests. Ammonia was at the same time set free and "fumed" with strong hydrochloric acid held near the mouth of the condenser. A watery solution of urotropine and the urine of a patient on urotropine behaved similarly.

The results of these chemical experiments may be summarised as follows:—1. Urotropine alone may, by prolonged heating, be made to yield formaldehyde, but that this decomposition does not take place at body temperature. 2. An alkaline solution of urotropine may be similarly decomposed, but that the body temperature is not sufficient to cause the change. 3. Dilute acids quickly decompose urotropine on boiling with the evolution of free formaldehyde and that this change occurs to a less degree at 37° C. 4. Acid salts—e.g., of the urine—liberate formaldehyde from urotropine on boiling, but not at 37° C. 5. The acid urine of a person taking 30 grains of urotropine a day does not contain free formaldehyde.

Although the exact chemical nature of the antiseptic body occurring in the urine has not been definitely settled it seems clear, both from the bacteriological and chemical evidence, that it is not free formaldehyde. The readiness with which urotropine is decomposed by acids, and to a less extent by acid salts, together with the more marked inhibitory power over the growth of micro-organism shown by the acid urine over simple urotropine solution or an alkaline urine, would suggest that it is not the urotropine itself which is the most important factor in producing this kolyseptic action. It seems probable that acid urines produce in the kidney a partial decomposition of the urotropine by which some body is liberated, or a fresh compound formed which has very marked inhibitory powers over the growth of bacteria. If this hypothesis is correct an important point in securing the full effect of urotropine in bacterial infections of the urine would be that the urine should be acid in reaction as it leaves the kidney. That this is so is borne out by clinical experience. One condition in which it is pre-eminently useful I have already mentioned at the commencement of this article—namely, typhoid cystitis. Here the urine is generally acid and the administration of urotropine quickly causes the bacilli to disappear. It has also been found useful in cystitis accompanying enlarged prostate and stricture of the urethra. Here, too, the urine is usually acid as it leaves the kidney, and only becomes alkaline from the ammoniacal decomposition which takes place in the bladder. In suppurative pyelitis and in cystitis caused by calculus in the kidney or bladder a similar condition of the urine obtains, and good effects follow treatment by urotropine. The administration of urotropine as a means of insuring an antiseptic urine and an aseptic condition of the genito-urinary tract in operations on those regions has been highly recommended by Casper. Other conditions, such as bacteriuria and the nocturnal enuresis of children, the latter being said to be frequently caused by infection with the bacillus coli communis, would probably be found to be benefited by treatment with urotropine, since the urine is acid in reaction. Experience has shown that gonorrhœa and tuberculous cystitis are not appreciably benefited, but the conditions of the infection in these two diseases are different to those previously mentioned—the micro-organisms are not in the urine but lie chiefly in the tissues.

As a urinary antiseptic urotropine appears to be much superior to those usually employed (e.g., salol, ammonium benzoate, boric acid, guaiacol, naphthalin, and resorcin), especially when the acidity of the urine is insured by suitable means. It is not, however, only a curative agent in the ordinary forms of urinary infection that the advantages of the drug are so apparent, but in typhoid fever it may be employed from the third or fourth week onward to the advantage both of the patient and the community at large.[3] Recent researches have shown that typhoid bacilli occur much more frequently in the urine than has been generally supposed and that they may persist for very long periods after convalescence (five years).[4] By the systematic use of urotropine in all cases the very real danger from this source which is so frequently overlooked may be entirely avoided.

I take this opportunity of expressing my thanks to Sir Trevor Lawrence, treasurer of St. Bartholomew's Hospital, through whose kindness I have been able to conduct these experiments, and also to Dr. F. W. Andrewes for much kind advice and assistance as the work proceeded.

INFECTIVE PAROTITIS AFTER ABDOMINAL SECTION.

BY WILLIAM ELDER, M.D., F.R.C.P. EDIN.

IN THE LANCET of Dec. 29th, 1900 (p. 1873), Dr. B. Addenbrooke records a case of double parotitis after abdominal section from which apparently two other cases of parotitis originated. The following facts in connexion with a case at present under my care are interesting when considered along with Dr. Addenbrooke's cases.

A young man, aged about 20 years, was suddenly seized with pain in the right iliac region on Dec. 19th, 1900. On seeing him I diagnosed appendicitis, and on the 23rd he was operated on by Mr. H. J. Stiles of Edinburgh, who evacuated pus from the region of the appendix. The patient did well, the temperature continuing normal till the morning of the 26th, when it began to rise and he complained of stiffness and swelling in the region of the right parotid with intense pain. The swelling rapidly increased for about ten hours when the pain subsided. At this time the whole parotid region and upper part of the neck were enormously swollen, the swelling coming forward over the cheek and involving the eyelids, especially the under one. 36 hours afterwards (on the evening of the 27th) the left parotid began to swell in the same way, whilst the right parotid began slowly to subside. The left parotid attained to almost exactly the same size as the right and the temperature reached 103° F. The swellings were very painful to pressure, but there was no indication of suppuration in either of them. The second parotid reached its maximum in about 12 hours after it showed symptoms of enlarging. Both parotids gradually subsided and the swelling has now almost entirely disappeared. The wound in the abdomen is healing splendidly and the patient is doing well.

This was a case of parotitis following an abdominal operation. These cases are known to occur occasionally, but in the case here recorded there was a complicating circumstance. On Nov. 7th, 49 days before the onset of the first symptoms of parotitis in this case, I attended the patient's brother in the same house with mumps (double parotitis). The source of infection in this case I was unable to trace. The two brothers had been living in the same house from that date till the onset of the appendicitis, but they had occupied the same room for the first time on Dec. 17th, two days before the appendicitis commenced and nine days before the first

[3] Richardson Journal of Experimental Medicine, January, 1899. Horton Smith: Goulstonian Lectures, 1900.
[4] Dr. H. Cushing's case reported by Richardson, loc. cit.

parotid became inflamed. The seven weeks that elapsed between the commencement of the symptoms of parotitis in the two cases is certainly a greater length of time than usual, but I think one can hardly exclude infection from the first case as a cause of the second case. When considered with Dr. Addenbrooke's cases these cases are interesting, as in them the opposite condition from that found in those of Dr. Addenbrooke obtained—viz., there was a case of infective parotitis in the same house seven weeks before the onset of double parotitis following an abdominal wound, whilst in Dr. Addenbrooke's cases a double parotitis followed an abdominal section, and after coming in contact with the patient inflammation was set up in the second person's parotids. This second person again apparently infected a third person. As it is, I think, doubtful whether my second case was a case of true mumps or parotitis following an abdominal wound, so I think it must also be doubtful whether Dr. Addenbrooke's first case was one of parotitis caused by the abdominal wound or a case of true mumps due to infection the source of which he was unable to trace; just as in my first case of mumps I was unable to trace the source of the infection.

Leith, N.B.

A CASE OF GANGRENE OF THE PENIS.

BY GEORGE A. CLARKSON, F.R.C.S. ENG.

GANGRENE of the penis occurring as a complication of any illness is necessarily of extreme rarity and has only been known to occur in conditions of great vital depression. It is mentioned as occurring occasionally in cases of typhus fever and it has been known to follow paraplegia. However, very few cases have been described and most surgical works do not even refer to it. In the present instance a feeble and dilated heart, extensive atheroma of the arteries, possibly inoculation of some part of the urethra with infective organisms, were the determining factors.

The patient, aged 51 years, employed in an iron foundry, had suffered severely from chronic bronchitis every winter for 15 years. For some years he had only been able to work in the summer months and latterly had so lost ground that he had been obliged to give up work even then. He emaciated considerably; his aspect became yellow and cadaverous, cough and expectoration were constant, and there was more or less complete loss of appetite and also some œdema of the legs. Examination of the chest revealed much emphysema, exceedingly feeble and distant heart sounds, and a slight impulse outside the nipple line; no murmur was audible. The temporal and radial arteries were very tortuous and rigid and the pulse was feeble and intermittent. In this condition he remained till Sept. 28th, 1899, when he suddenly became very faint and collapsed. He was put to bed and wrapped in blankets. When seen he was barely conscious, the extremities were cold, the heart sounds were inaudible, and the pulse was hardly perceptible. With cardiac and general stimulants he rallied and seemed to be better for some days. The tongue, however, remained coated and dry, there was some muttering delirium at night, and the urine, which had been ammoniacal and offensive, became more so now that he was confined to bed. On Oct. 11th he complained of considerable pain in the penis, which was much swollen all over. There was no phimosis or sore under the prepuce. On the 13th several gangrenous patches appeared and during the next day or two the whole organ became involved. Five incisions were made deep into the tissues with the view of relieving any possible tension, but there did not appear to be any; the deeper parts of the organ seemed to be equally affected and only a small quantity of dark fluid was discharged into the dressings. The whole organ appeared to be in a condition of ordinary moist gangrene. Owing to his general condition no further operative measures were deemed advisable. Continuous hot boric fomentations were applied and immersion was given in a hot boric bath; opium, carbonate of ammonia, and digitalis were given internally. The patient died on Oct. 16th, the whole organ being completely gangrenous.

It seems hardly credible that an organ with the anatomical peculiarities of the penis could be the subject of dry gangrene, yet such has occurred. In the case of a patient under the care of the late Mr. Partridge at King's College Hospital[1] gangrene attacked the penis and the organ became black and charred-looking. A line of demarcation formed, urine issued at this point, the penis dropped off, and the patient made a good recovery. His age was only 40 years.

Leicester.

A Mirror OF HOSPITAL PRACTICE, BRITISH AND FOREIGN.

Nulla autem est alia pro certo noscendi via, nisi quampluritmas et morborum et dissectionum historias, tum aliorum tum proprias collectas habere, et inter se comparare.—MORGAGNI *De Sed. et Caus. Morb.*, lib. iv. Proœmium.

ST. THOMAS'S HOSPITAL.

TWO CASES OF SARCOMA OF THE BREAST.

(Under the care of Mr. W. H. BATTLE.)

TRAUMATISM as an etiological factor in the appearance of sarcoma is now generally accepted, although it is not possible to offer any very satisfactory explanation of the manner in which an injury gives rise to the new growth. In many cases the sarcoma appears before the swelling caused by hæmorrhage or inflammation has completely subsided, and it is possible that these effused products form a suitable nidus for the development of the neoplasm. True sarcomata of the breast are certainly not common, and the two interesting cases recorded below are in many ways noteworthy; especially remarkable is the age of the patient in the second case—namely, 13 years.

CASE 1.—A woman, aged 36 years, was admitted into St. Thomas's Hospital on June 8th, 1900, complaining of a tumour of the breast. About 14 months before admission she had received a blow on the left breast, which became tender and was much bruised. Soon after this she suffered from a sharp pain in that breast, worse in damp weather, and she also noticed that a swelling was present. She therefore consulted a medical man who prescribed some medicine. The swelling in the breast grew steadily larger and she took to her bed. About ten days before admission the patient got up and had a severe hæmorrhage from the breast and therefore had to take to her bed again. After this she was so weak that she fainted whenever she sat up. A week before admission the breast began to fungate and then grew rapidly. The only point in her family history of any importance was the statement that an aunt on the mother's side had had "cancer of the breast" for a year and was still alive.

On admission the patient was very thin and anæmic and had an anxious expression. The left breast was the seat of a large mushroom-like fungating tumour with an offensive, thin, bloody discharge (see figure). The tumour was flattened, with a margin which was much everted. The breast itself was not much enlarged and formed a kind of pedicle for the expanded part; this pedicle was narrower from within outwards than from above downwards. The surface of the tumour was nodular and blackened. In the left axilla one enlarged gland could be felt. The other organs were quite normal.

On June 11th Mr. Battle operated. The narrowness of the attached portion of the breast already mentioned was utilised; it was clamped like a pedicle with two long-bladed forceps passed from above and from below in the line of the pectoralis major. The growth was cut away close to the forceps and the breast was then excised. The axillary gland was not touched, as its enlargement was supposed to be due to septic absorption from the surface of the tumour. Very little blood was lost during the operation and this was so thin and pale that it produced merely yellow staining of the aseptic cloths which surrounded the operation area. There was apparently no tendency to infiltrate the breast substance—in fact, the breast itself appeared to be quite small and really not much larger than the opposite one.

[1] Medical Times and Gazette, vol. xx.

On June 12th the patient felt quite well and had had a good night; on the 13th the wound was dressed—it looked very healthy. Later there was a slight discharge from the wound and a small abscess formed at the upper part of the incision, but by July 3rd the wound had almost healed and

she left the hospital the next day. She was seen on August 27th and it was found that her general condition had much improved. The gland in the axilla was no longer noticeable. The report of the microscopic examination of the growth stated that it was a round-celled sarcoma.

CASE 2.—A girl, aged 13 years, was admitted into St. Thomas's Hospital on July 5th, 1900, complaining of a swelling of the right breast. Two months before admission the patient received a blow on the right breast, and soon afterwards she noticed a small lump in that breast, which, after a short time, went away spontaneously, but a week or so later she noticed a swelling "as large as a nut" in the same place. This gave her occasional pain and gradually increased in size. The case had at first been treated as a mastitis. There was nothing of any importance in either the personal or family history.

On admission the right breast was found to contain a prominent, somewhat bossy swelling; it was of about the size of a Tangerine orange and was freely moveable on the deeper structures. It was surmounted by the nipple, where it was also most painful, though at times it gave her no pain at all. On palpation a slight amount of fluctuation could be felt just above the nipple. The skin was nowhere bound down to the swelling except immediately below the nipple. The most striking feature about the breast was the bold manner in which the tumour stood out from the chest wall, in marked contrast to the ill-developed breast on the other side. Nowhere in the breast was there any sign of inflammation. In the axilla a few glands might be felt, although they had not attained any considerable size. The urine on examination was found to contain a trace of albumin and blood and a doubtful trace of sugar.

On July 13th Mr. Battle operated. He made an oblique incision about six inches in length from the anterior axillary fold downwards and inwards, passing about an inch below the nipple. The two ends of this incision were connected by another which passed about an inch above the nipple. The tumour was then dissected out with the whole of the breast and much of the surrounding fatty tissue. The fascia covering the pectoralis major was also removed. The two edges of the skin were then united by salmon-gut sutures and the wound was dressed with dry cyanide gauze. The patient bore the operation well and no rise of temperature occurred at any time and the wound was not dressed until the 19th, when it was found to have healed almost throughout its length. She was discharged from the hospital on July 21st. The report from the clinical laboratory stated that it was an adeno-sarcoma.

Remarks by Mr. BATTLE.—The report from the Clinical Laboratory on the first case describes the growth as a round-celled sarcoma. This may be correct but there are one or two points which suggest the possibility of it being a simple fungating growth from within a cyst. These are (1) the small involvement of breast tissue; (2) the absence of glandular disease; (3) the absence of any other growths; and (4) the fact that the history was rather long for a round-celled sarcoma. On the other hand, the history of injury and the report of the microscopical examination are in favour of the growth being a sarcoma.

The second case was traumatic in origin and is one of the youngest of the kind on record. The way in which the tumour stood out from the surface was very striking and quite unlike the appearance presented by mastitis. The absence of œdema was also noteworthy. Sheild[1] describes one case of myxo-sarcoma at the age of six months, the specimen being in the Royal College of Surgeons of England. He also recorded a case for the late Sir George Humphry, the patient being 14 years of age; this was a spindle-celled growth.

GOVERNMENT CIVIL HOSPITAL, HONG-KONG.

TWO CASES OF RUPTURED SPLEEN; ABDOMINAL SECTION; ONE RECOVERY AND ONE DEATH.

(Under the care of Mr. J. BELL, Acting Principal Civil Medical Officer.)

EXCISION of the spleen for disease is an operation with an extremely high mortality and it is doubtful if recovery has ever followed when the operation has been done for leucocythæmia. For injury, however, excision of this organ is an extremely satisfactory operation, and even in pre-antiseptic days cases occurred in which a spleen extruded through a wound of the abdominal wall was removed after its pedicle had been tied.

CASE 1.—A Chinese male adult was admitted into the Government Civil Hospital, Hong-Hong, on Sept. 6th, 1900, at 12.45 P.M., having been assaulted in the early morning. He was much collapsed and in great pain, chiefly referred to the epigastrium. There was well-marked dulness in both flanks and he had a quick small pulse. Assisted by Captain Wall, I.M.S., the abdomen was rapidly opened in the middle line under strict antiseptic precautions, the spleen was removed, and the peritoneal cavity was thoroughly cleared out with warm sponges. During the operation Dr. Thomson of the Royal Army Medical Corps and Lieutenant J. W. F. Rait, I.M.S., kept up transfusion, which proceeding very materially contributed to the successful result. The spleen weighed 16 ounces and was torn right across. At 9 P.M. the patient had rallied from the shock and was very comfortable. On the third day, owing to great distension, the wound gaped, so the patient was again put under an anæsthetic and several more stitches were inserted. Free purging soon removed the distension. The patient recovered slowly, the wound healing well. On Oct. 20th he was well enough to attend at the police-court and on the 27th he left the hospital.

CASE 2.—A Chinese male, aged 27 years, was admitted to hospital at 10 A.M. on Sept. 19, 1900, having been mixed up in a free fight. He had been kicked and struck on the abdomen and head. The patient was not much collapsed but complained of great pain over the abdomen. He slowly got worse all day, and at 8 P.M. there were well-marked signs of internal hæmorrhage. Owing to the delay of taking his dying depositions it was not possible to interfere till midnight. Assisted by Dr. G. P. Jordan, who before the operation began transfused two pints of saline fluid into the cellular tissue of the axilla, the abdomen was opened in the middle line, the spleen was removed, and blood-clots were cleared out. The organ weighed 18 ounces and the rupture had occurred beneath the capsule which was completely raised from the surface and had ruptured close to the hilum. 24 hours later the patient had completely recovered from the shock. His pulse had improved under strychnine and camphor and he expressed himself as feeling quite comfortable. On the following day, however, cerebral symptoms set in, with gradually increasing coma, great restlessness, and a rising temperature, till 8 P.M., when he died, the temperature being 105° F. and the pulse 148.

Necropsy.—At the post-mortem examination the abdomen was found to be clean and the ligature was quite fast on the stump. There was much extravasation in the muscles behind the right ear. Exactly opposite on the left side there was a fracture running through the petrous portion of the

[1] Diseases of the Breast.

temporal bone to the base of the skull. There was a large clot pressing on the medulla.

Remarks by Mr. BELL.—These cases will serve, I hope, as an encouragement to others to operate even after a long interval has elapsed since the accident. Transfusion early undoubtedly helped greatly to the successful result.

Medical Societies.

MEDICAL SOCIETY OF LONDON.

The Value of Skiagraphy in the Diagnosis of Chest Disease.

A MEETING of this society was held on Jan. 14th, Mr. JOHN H. MORGAN, the President, being in the chair.

Dr. HUGH WALSHAM and Dr. E. CLIFFORD BEALE communicated a paper on the Value of Skiagraphy in the Diagnosis of Chest Disease, illustrated by skiagrams of various morbid conditions within the thoracic cavity. In order to obtain a satisfactory shadow either upon the fluorescent screen or the sensitive plate it was absolutely necessary to employ a powerful coil capable of yielding a 12 or 14 inch spark. The patient should lie on a couch face downwards, the sensitive plate, duly protected from light and injury, being placed under the chest and the tube from two to three feet above it, great care being taken that the anti-cathode in the tube should be placed exactly vertical to the part of the chest to be examined. Stereoscopic views could be obtained by means of Mr. Mackenzie Davidson's apparatus. An exposure of two minutes was, as a rule, sufficient in the case of the chest, but the greater the distance of the tube from the object the longer should be the exposure. In observations with the fluorescent screen the tube must of necessity be closer to the chest-wall, and allowance had then to be made in interpreting shadows for the apparent enlargement of the tissues lying nearest to the tube owing to the divergence of the rays. It was always advisable to examine with the screen at the back as well as at the front, and useful information could often be obtained by diagonal observations. No danger need be apprehended where the rays were only passed for a few minutes at a time. Cases of dermatitis had from time to time been reported, but in such instances the exposures had been excessive—viz., from half an hour to two hours. In order to interpret morbid shadows it was necessary to study those thrown by the normal thoracic structures. Several skiagrams of healthy chests were then thrown upon the screen, in all of which the shadows of the heart, diaphragm, and mediastinal tissues were clearly seen, but in addition to them certain faint streaks by the left side of the heart and both sides of the mediastinal shadow. These had been shown by Dr. Walsham's and Dr. Beale's observations to be due to the pericardium and visceral pleura. The shadow of the scapulæ, the anterior axillary fold, and in some cases of the nipple might be recognised as normal, but they were easily identified by moving the arms. Healthy lungs were shown to be translucent. It had long been recognised that advanced tuberculous changes showed definite shadows, but the very earliest deposits of tubercle did not yield any appreciable shadow. Cases were quoted and exhibited proving that tuberculous shadows could be detected before the presence of tubercle was indicated by any abnormal physical signs, and that in suspected early cases where no shadow appeared there was no subsequent evidence that the disease was actually present. In cases that had been presumed to be unilateral disease a shadow was sometimes to be found at the other apex also and in many such instances the extent as well as the presence of the disease could be clearly defined. The more advanced the disease the darker the shadow, especially where caseation was in progress. Cavities were indicated by light areas in the midst of dense shadows. Fibroid changes and adhesions only gave rise to a shadow after they attained to a definite density and the shadows differed considerably from those thrown by tubercle. Emphysema was indicated by exceptional translucency of the affected parts of the lung. In early dry pleuritis only a very faint shadow could be detected. Serous effusion caused faint blurring of the rib shadows but did not obliterate them; the upper margin of the fluid frequently showed a clear line of demarcation. Purulent effusion, on the other hand, caused very dark shadows. A tube of pus removed from the pleural cavity gave a shadow almost as dark as that of a bone of equal calibre, very much darker than the shadow of a similar amount of fluid blood or of serum. Abscesses, like caseating nodules, threw dark shadows, and caseous tuberculous nodules were clearly discernible even through thick tissues such as the kidney. In heart diseases the rays were of less diagnostic value, but much more observation was necessary on this point. By far the most important use of skiagraphy in chest disease was for the detection of morbid growths and aneurysms. Many examples of the latter were shown where the evidence afforded by the rays was far more precise and definite than that obtained by the ordinary methods. By means of the skiascope the movements of the heart and diaphragm could be watched, and the condition of aneurysms, whether full of dark clot or semi-translucent fluid blood, with the extent and position of their maximum pulsation, could be determined with considerable accuracy. Much more work remained to be done on the subject and the paper was put forward only as a preliminary statement of the observations already made.

The PRESIDENT remarked that the art of radiography was still in its infancy and a contribution like that before the society was highly welcome. He hoped that it would elicit further information from the members present.

Dr. H. LEWIS JONES congratulated Dr. Walsham and Dr. Beale upon their paper. He had seen a great deal of Dr. Walsham's work and he was a most painstaking observer. He had no doubt about the value of radiography. If he were doubtful about a case of early pulmonary tuberculosis he would rather have a skiagram than the opinion of the best auscultator on the case. It was no doubt necessary to have some experience and knowledge to be able to read the different shadows in skiagrams, but a little practice rendered a person skilful in this respect. No doubt by-and-by an apparatus of this kind would become a necessary part of a physician's means of observation and they should by-and-by be able to set aside the stethoscope. As to aneurysm, the disease had within his experience been revealed both in unsuspected cases and in cases which were only suspicious.

Dr. A. E. SANSOM was entirely in favour of the use of radiography. He had used it very often and attached great value to it, but he could not agree with the suggestion of doing away with the stethoscope. Auscultation, palpation, and percussion would always remain valuable means of physical diagnosis and the x rays were a valuable supplementary method but could not replace the others. He remembered, however, one case in which the x rays clearly showed a bulging aorta in which the physical signs and other symptoms were absolutely negative.

Dr. J. KINGSTON FOWLER wished to emphasise the necessity of using the very best apparatus procurable. Short sparks were no use. He quoted cases of pulmonary tuberculosis in which the x rays had been of considerable use, but he was afraid that on some occasions the first rib came in the way of diagnosing disease at the apex. Radiography was a valuable means of diagnosis but he did not think exaggerated claims should be made for any one method.

Dr. BEALE, in reply, said that Dr. Walsham had done the practical work in connexion with the paper and it had required great perseverance to accomplish. He personally did not advocate the replacement of the older methods. He regarded radiography as simply an adjunct to them. He hoped that in spite of the expense the apparatus would soon become a necessary and routine means of investigation. He spoke very highly of Mr. Mackenzie Davidson's spectroscopic apparatus and he concluded by demonstrating the diagonal method of examining the chest. This was, he said, a novel and valuable means of examining certain cases. It had been employed at Nice and Vienna but had not hitherto been employed in England.

PATHOLOGICAL SOCIETY OF LONDON.

Cirrhosis Maligna.—Primary Cancer in a Cirrhotic Liver with Metastasis in the Lungs.—Primary Carcinoma of the Liver associated with Cirrhosis.—Cirrhotic Liver the seat of Secondary Carcinoma.—Chronic Cholangitis in a Child.—Localisation of the Bacilli of Leprosy.—Adenomatous Papilloma of the Sigmoid.—Chondro-sarcoma of the Tibia associated with Pendulous Bodies.—Malignant Disease of the Suprarenal Body.

A MEETING of this society was held on Jan. 15th, Mr. W. WATSON CHEYNE, the President, being in the chair.

Dr. H. D. ROLLESTON read a paper on a case of Primary Carcinoma in a Cirrhotic Liver (Cirrhosis Maligna or Cirrhosis Carcinomatosus). The patient was a man, aged 44 years, who during life had hæmatemesis, pain in the hepatic region, and ascites which required tapping on four occasions. At the necropsy the liver was the only organ showing any new growth; it was universally cirrhosed, weighing 52 ounces, and in addition presented a white gelatinous growth projecting from the right lobe which by invading the liver substance had grown directly into the bifurcation of the portal vein; the growth had travelled along the portal vein and given rise to secondary carcinomatous nodules in the liver. Microscopically the tumour was formed of deeply staining cells arranged in the form of twisting tubules with obliterated lumina; the tubules were separated from each other by capillaries, had an irregular arrangement, and corresponded to the form of carcinoma described by Hanot and Gilbert as "Épithéliome trabéculaire." These writers regarded the growth as synchronous with, and due to the same cause, as the cirrhosis. Sabourin, with whom Dr. Rolleston agreed, regarded the cirrhosis as the earlier change. It seemed possible that the growth was a further development of the so-called new bile-ducts which in reality might be considered in the light of a compensatory hyperplasia of the liver-cells. The growth might, therefore, like chronic endarteritis, be regarded in the light of a hyperplasia that failed. Possibly this malignant change was due to infection with the—as yet undiscovered—parasite of cancer. Sections of the portal vein showed its lumen to be filled with the same growth, and on this the diagnosis of malignancy and the distinction from cirrhosis complicated by adenoma depended.

Dr. WILLIAM HUNTER made a communication on two cases of Primary Cancer in a Cirrhotic Liver with Metastasis in the Lungs. The first was that of a man, aged 60 years, who was admitted for dropsy and ascites after an illness of only six weeks' duration. The second case was a man, aged 55 years, who was admitted for jaundice with ascites after an illness of three months duration. Both the patients were tapped, but a fatal issue resulted. In both cases the liver was the seat of (1) coarse multilobular cirrhosis, (2) islets of apparently healthy liver cells, (3) deposits of cancer cells in some of these islets, and (4) thrombosis of the branches of the portal vein. In both cases there were metastatic deposits in the lungs of the same neoplasm which presented a markedly tubular character. Dr. William Hunter expressed the view that the neoplasm originated from the liver cells by the direct transformation of the latter. Many of the cells were multinuclear and presented evidence of extreme activity. The growths in the lungs resembled in a very remarkable way the new growths in the liver.

Dr. CAMPBELL THOMSON showed a specimen of Primary Carcinoma of the Liver associated with Cirrhosis which occurred in a man, aged 40 years. The liver was much enlarged and weighed 85 ounces. The right lobe was almost entirely infiltrated with new growth, which formed, also, a large central raised mass from which nodules of various sizes radiated. There was extensive thrombosis of the portal veins. The liver was cirrhotic and showed typical projections on its surface and on section. There were numerous secondary growths in both lungs and in the lymphatic glands. During the past two years Dr. Thomson had made 170 post-mortem examinations upon cases of malignant disease at the Middlesex Hospital, and out of these had found only three cases of primary carcinoma of the liver of which only this one had been associated with cirrhosis. He thought, from the appearance of the growth, that the simultaneous occurrence of the carcinoma and the cirrhosis in this specimen was probably a coincidence.

Dr. H. MORLEY FLETCHER exhibited a Cirrhotic Liver the seat of Secondary Carcinoma taken from a man, aged 54 years, who had been admitted for cirrhosis with ascites. In this case the carcinomatous deposit was a secondary growth and in that way differed from the cases of the previous speakers. The liver also showed a remarkable malformation of the gall-bladder, which was attached to the upper surface of the right lobe of the liver.—The PRESIDENT asked Dr. Hunter whether he actually saw the continued development of cancer cells from the liver cells or whether he only inferred that the change took place.—Dr. A. G. AULD remarked that the statement by Dr. Hunter that the liver cells were directly transformed into carcinomatous cells was open to grave doubt. It had been held by some pathologists that the liver cells themselves were derived from the mesoblast and transformation of hepatic cells into connective tissue had been described by Hamilton and others. He thought there was much probability in this. Some years ago he had met with a case which had first given him the impression that cancer cells had been developed from liver cells, but further investigation showed such hypothesis to be fallacious.—Mr. S. G. SHATTOCK had met with cases of this class. He had never seen any difficulty in recognising the fact that carcinoma could arise from liver cells. He had always been under the impression that the liver was a structure of hypoblastic origin. There were, in point of fact, two classes of hepatic carcinoma—one which arose from the ducts and another, the spheroidal-celled class, which was derived directly from the liver cells.—Mr. C. A. BALLANCE asked what was the exact difference between a normal cell and a cancer cell in the liver.—Dr. HUNTER, in reply, said that he did not mean to imply that there was a total transformation of a mass of liver-cells into cancer, but in certain islets there could be seen an extension from cell to cell of the carcinomatous characters. The difference between a normal liver-cell and a cancer-cell was very striking. The former underwent enlargement and presented differences of staining, especially in the nuclei.

Dr. H. MORLEY FLETCHER also exhibited specimens taken from a case of Chronic Cholangitis. The patient was a child, aged three and a half years, who was admitted to St. Bartholomew's Hospital, under the care of Sir William Church, suffering from severe dyspnœa. The illness had begun two weeks previously with cough and on admission the respirations were from 80 to 90 a minute. The liver was enlarged, but there was no jaundice or any other symptoms pointing to disease of that organ. The child died four days later. The lungs were in a condition of acute bronchiectasis, similar to that shown to the society by Dr. H. H. Tooth some years ago. The liver contained pale areas of fibrous tissue surrounding the bile ducts, with numerous cystic spaces filled with bile-stained débris. There was evidence of a pericholangitis of long-standing, as shown by the development of well-formed fibrous tissue with formation of new bile ducts therein. In places an acute cholangitis had occurred with destruction of the bile ducts and formation of a cyst containing bile-stained material. The origin of the lesions was obscure. No evidence of syphilis could be obtained.—Dr. HUNTER asked if there had not been any jaundice? He had recently seen a case somewhat resembling this one of infective cholangitis occurring in a man. This case had been less chronic in character.—Dr. ROLLESTON recalled a case which he had seen three years before of a man, aged 48 years. The liver had not presented white lumps softening in the centre, but there was evidence that two changes had taken place in the liver: (1) a cholangitic and (2) a streptococcal infection of the lymphatics, by which means the portal veins had become infected and the seat of thrombosis. He thought that the lymphatics played a prominent part in the pericholangitic changes.—Dr. FLETCHER, in reply, said he did not place any special importance on the fact that his patient was a child. He thought Dr. Hunter's suggestion a very good one and that the lymphatic system played a very great part in the process.

Mr. GEORGE PERNET read a paper entitled "The Bacilli of Leprosy: Are they Extra- or Intra-cellular?" Most observers and writers were of opinion that the colonies observed in sections of tissues were situated within the cells. Mr. Pernet opposed this view and on this point agreed with Unna, Leloir, and others who contended that the masses were extra-cellular. The so-called lepra cells were not cells at all, but gleal masses of bacilli. He (Mr. Pernet) had examined many microscopical preparations of leprous tissues and his conclusion was that the great majority of the bacilli were in the intercellular and lymphatic spaces; that was to say, were extra-cellular. As to the meaning of the gleal masses, he expressed the belief that they were a stage in the life-history of the bacillus lepræ, just as a similar stage had been demonstrated, for instance, in connexion with cladothrix dichotoma (of Billet). It was probably a resting stage, during which the parasite prepared for further proliferation. This agreed with the clinical experience of leprosy, in the course of which fresh eruptions and exacerbations were frequently observed. The paper was illustrated by microscopical preparations.—Dr. F. W. ANDREWES remarked that three years ago the

late Professor Kanthack brought before the Pathological Society of London a series of sections to demonstrate that many of the so-called leprous cells were in reality only lymphatic spaces stuffed with clumps of bacilli. He had specimens in his possession which showed that at any rate in the spleen certain of the true splenic cells contained bacilli. Some were distributed outside but certainly some were within the cells.—Mr. S. G. SHATTOCK confirmed the last speaker and said that in the lymphatic glands he had found the same intracellular distribution. It was a fact beyond dispute that some of the cells contained bacilli and some of these were undergoing vacuolation.—Mr. PERNET, in reply, said that he quite admitted the fact that the bacilli might be both extra- and intra-cellular, but the point he wished to establish was that in the majority of instances they were extra-cellular. He also wished to emphasise the fact that these so-called leprous cells were masses of bacilli and not true cells.

Mr. PHILIP DE SANTI read notes of a case (and exhibited the specimen) of Papillary Adenoma of the Sigmoid Flexure. The patient, who was 51 years of age, had been under the care of Dr. R. G. Hebb for some months as an out-patient and had suffered from constipation and diarrhœa, pains in the abdomen, occasional vomiting, and passage of blood and "slime" per rectum. In 15 months he had lost two and a half stone in weight. In the left iliac fossa could be felt a fairly distinct hard lump, evidently intra-abdominal and connected with the sigmoid flexure. Malignant disease was suspected, and in September, 1900, Mr. de Santi opened the abdomen and the sigmoid flexure, exposing a small tumour which turned out to be a simple pedunculated papillary adenoma. The tumour was removed, the gut was closed with Lembert's sutures, and the patient made an uninterrupted recovery. The points of interest in the case were, first the train of symptoms which, together with the feel of the tumour were strongly suspicious of malignant disease; and secondly, the rarity of a tumour of this sort as a solitary growth of the sigmoid flexure.

Mr. S. G. SHATTOCK exhibited the Knee-joint of a woman operated upon by Mr. C. Stonham for a Tumour of the Head of the Tibia. On the bone being sawn through after amputation, there was found a large tumour in the head of the tibia and others of smaller size in the lower end of that bone and the lower end of the femur. The tumours were of the calcifying chondro-sarcomatous kind. The interest of the specimen, however, related to the presence of pendulous bodies which projected from the synovial membrane of the knee-joint; these presented precisely the same structure as the growth in the head of the tibia. The same doubt as to the explanation of such association existed now as when Virchow discussed the subject of multiple chondromata in his lectures. Mr. Shattock held that both the possible views were correct in different cases. According to one view all the lesser growths in the present case would be metastatic to the chief tumour in the head of the tibia. The other view was that a sarcomatous metaplasia had affected several dormant foci of cartilage independently. The cartilage cells present normally in the synovial fringes of joints were as much fœtal, or developmental, relics as the foci that might remain in the ends of the long bones, since they dated from the liquefaction of tissue whereby the articular cavities were formed between the cartilaginous bases of the bones. The pendulous bodies in the present specimen contained areas of such well-developed cartilage that what had happened was probably a sarcomatous transformation like that which had occurred in the head of the tibia, and in a considerable area of the centre of the tumour, which consisted of pure hyaline cartilage and represented an intra-osseous chondroma. The same doubt obtained in the condition which had been named by Garré "secondary malignant neuroma." In some of these cases the sarcomata of the nerves appeared to be metastatic upon a sarcomatous transformation in a nerve-fibroma; in others they appeared to arise independently in pre-existing fibromata of the nerves. In the second class of case the sarcomatous transformation occurred in tumours so widely separated (the disease being still confined to the nervous system) that a metastatic infection was hardly credible; in the first class of case the recurrences involved a series of nerves centripetally, and here the passage of infecting cells by the lymph channels of the nerves themselves would serve to explain why the metastasis was for a long while limited to the nervous system though visceral disease might ultimately ensue.—The PRESIDENT wished to understand whether these tumours were malignant or not. It did not necessarily follow that because a structure showed sarcomatous growth a tumour was malignant.—Dr. W. S. LAZARUS-BARLOW remarked that there was a second deposit at the lower end of the tibia. This with the secondary growths in the pendulous bodies showed the case to be malignant, but it was limited to the lower segment of the lower limb.

Dr. O. K. WILLIAMSON exhibited the Right Suprarenal Body from a woman, aged 51 years, which was completely involved in a mass of new growth, the primary deposit having occurred in the mediastinum.

CLINICAL SOCIETY OF LONDON.

Fatal Pancreatic Cyst of Enormous Size simulating Ascites —Subacute Combined Degeneration of the Spinal Cord in Association with Pernicious Anæmia.—Syphilitic Disease of the Aortic Valve.—Rheumatic Periostitis with Subcutaneous Nodules.

A MEETING of this society was held on Jan. 11th, Sir R. DOUGLAS POWELL, Bart., the President, being in the chair.

Dr. SIDNEY PHILLIPS read the notes of a case of Fatal Pancreatic Cyst of Enormous Size simulating Ascites. The patient, a man, aged 22 years, received a kick in the abdomen from a horse causing intense pain which confined him to bed for a time. After this he was subject to occasional acute attacks of abdominal pain, and five months later he was admitted into St. Mary's Hospital, very emaciated, without pyrexia, but with an enormously tense distended abdomen, dull on percussion everywhere except in the area of the stomach. There was a fluid thrill and eversion of the umbilicus; the percussion dulness did not alter quite so freely with altered positions of the patient, as was usual in ascites, but it seemed probable that it was a case of ascites with peritoneal adhesions. The patient became gradually worse, and after 145 ounces of fluid had been drained off by Southey's tubes there was no improvement. A few days later, therefore, an incision in the abdominal wall below the umbilicus was made and a large quantity of fluid like that of ascites was let out; the wound healed up but the patient continued to get worse and died a few days later. The necropsy showed that the fluid had been contained in a huge cyst of the pancreas occupying nearly the whole of the abdominal cavity and coming forward close to the abdominal wall. The stomach was above the cyst and the margins of the two structures were closely adherent; downwards the cyst extended to the pelvic brim. The cyst had originated in a communication one-sixth of an inch in diameter in the head of the pancreas. Dr. Phillips commented on the enormous size of this cyst, which virtually filled the whole of the abdominal cavity, and was indistinguishable during life, and without careful dissection after death, from ascites. The contained fluid had a specific gravity of 1002; it was clear and slightly yellow in colour, was exactly like that in ordinary ascites, and was different from that generally contained in pancreatic cysts. Neither tapping nor laparotomy could have been expected to effect a cure in such a case even if its nature had been known.—Mr. NEWTON PITT remarked that an interesting feature of the case was the enormous size of the cyst, such cysts, he added, sometimes presenting above and sometimes below the transverse colon. He asked in which position it appeared in Dr. Phillips's case. The nature of the fluid was to him the most noteworthy feature in the case. In all recorded cases of pancreatic cyst the fluid had been turbid with much débris, and it was very striking that in this case the fluid should have been clean, with a specific gravity of 1002, exactly resembling ascitic fluid. He thought the circumstance needed explanation. Referring to the digestive action of the fluid on the tissues with which it came into contact he remarked that this made the case under consideration even more unusual.—Dr. J. P. ZUM BUSCH mentioned a somewhat similar case which he had seen nine years ago. On admission the case was thought to be one of cirrhosis of the liver, and upwards of five litres of clear fluid were withdrawn which turned starch into sugar. He remarked that it was highly dangerous to tap in these cases. In the case to which he referred the patient subsequently died from septic peritonitis and at the

necropsy it was found to be a case of pancreatic cyst.—Mr. A. E. J. BARKER asked what was the exact relation of the tumour to the stomach; sometimes these cysts presented above and sometimes below that organ. Rupture of such cysts generally proved fatal and they certainly ought not to be treated by puncture but by incision.—The PRESIDENT referred to a case in which puncture was resorted to under the impression that there was ascitic fluid. In another case a very large pancreatic cyst was taken to be hydatid and was incised; then a correct diagnosis was made and the patient recovered. He subsequently developed glycosuria and died from diabetes.—Dr. PHILLIPS in reply, said he had brought the case forward as one in which the diagnosis had not been made and consequently not as guide to treatment. He regretted that no chemical examination of the fluid had been made during life, and at the necropsy it was not possible to procure any of the cyst contents.

Dr F E. BATTEN read notes of a case of Subacute Combined Degeneration of the Cord in association with Pernicious Anæmia. The case was that of a man, aged 45 years, who some five or six years previously—i.e., in 1894—noticed that he was becoming pale. In 1897 he was admitted to the North-West London Hospital, under the care of Dr. Harry Campbell, with pernicious anæmia. He improved under treatment and was discharged. In November, 1899, he was admitted to Regent's Park Hospital, under the care of Dr. L. G. Guthrie, suffering with spastic paraplegia, which had developed gradually two months before admission. He remained in that hospital till February, 1900. He was admitted to "Friedenheim" under the care of Dr. P. J. F. Lush in April of the same year. He had then the aspect of a man with pernicious anæmia; the legs were rigid and there was still slight voluntary power, the knee-jerks were exaggerated, and ankle clonus was present. The examination of the blood showed extreme diminution in the number of red cells, nucleated red corpuscles, macrocytes, microcytes, and poikilocytosis. There was loss of sensation over the feet and legs below the knees. There was complete loss of control over the sphincters and a bed-sore formed over the sacrum. The patient died at the end of April. The microscopical examination of the cord showed degeneration of the posterior columns, degeneration in the region of the crossed pyramidal and direct cerebellar tracts, and also in the region of the direct pyramidal tracts. The liver gave the free cross reaction but not to a marked degree. The pathology of the condition was next dealt with and it was suggested that the cord changes and the anæmia were probably due to one and the same poison. The occurrence of spinal cord changes in association with profound anæmia was well recognised, but only a small proportion of these cases showed changes in the blood characteristic of pernicious anæmia. Dana had stated that proportion to be 10 per cent. The paper was illustrated by lantern slides and microscopical specimens.—Dr. J. A. ORMEROD mentioned the case of a man with symptoms of pernicious anæmia who subsequently developed symptoms pointing to spinal disease—numbness, loss of knee-jerk, &c.—who rapidly sank and died, when changes were found characteristic of this form of disease.—Dr. PERCY KIDD asked what were the precise clinical symptoms in these cases, adding that he had had several cases of pernicious anæmia associated with numbness, and he referred to the case of a man in whom, in addition to numbness and tingling, the knee-jerk was absent. He asked whether this was usual.—Dr. NEWTON PITT asked Dr. Batten whether he had met with cases of the kind in which the changes were limited to the posterior columns. In a similar case under his own observation nothing during life pointed to spinal disease, and he raised the question whether the cases in which the predominant symptoms were those of pernicious anæmia were those in which the mischief was limited to the posterior columns.—The PRESIDENT asked whether any changes had been noticed in other parts of the nervous system.—Dr. BATTEN, in reply, said that the brain was perfectly healthy as far down as the middle region of the pons, where a few degenerated fibres were found in the pyramidal tracts. He regretted that the colour index of the hæmoglobin had not been noted. In regard to the clinical symptoms the loss of knee-jerk was very characteristic. The disease had three stages, one in which there were ataxia with slight spasticity and slight subjective signs, numbness, and tingling in the hands and feet; a second period when the spasticity was marked and the knee-jerk was active; and a third characterised by absolute flaccidity, often coming on suddenly with a rise of temperature, total absence of reflexes, ultimately involving the trunk. It was worthy of note that in spite of the absence of knee-jerk and clonus the Babinski extensor sign could be obtained. In reply to Dr. Pitt he observed that if the pernicious anæmia proved fatal before the disease had advanced very far the changes might be limited to the posterior columns, and he asked whether the case referred to by Dr. Pitt had been examined by the Marchi method, which showed changes of recent supervention. Many cases published by continental observers had apparently had no spinal symptoms and had shown the degeneration limited to the posterior columns.

Dr. CHARLES W. CHAPMAN read a paper on a case of Aortic Regurgitation probably due to Syphilis. The patient was a married woman, aged 40 years, who had been under his care at the National Hospital for Diseases of the Heart. The family history was exceptionally good and the personal history was equally so up to the patient's first confinement at 22 years of age. Out of eight children born at term two died at two years from diphtheria, another had snuffles and died from bronchitis a few weeks after birth. There were four miscarriages from the eighth to the twelfth week. The patient was very feeble and had a wan appearance. On examination the heart's action was found to be unequal; the apex was just under the sixth rib and just outside the nipple line. The cardiac dulness was but little increased. A faint but distinct double murmur was heard in the aortic area. The other organs were healthy. The pulse was feeble. Syphilitic disease of the aortic valve was diagnosed and the treatment consisted of a course of mercury followed by iodide of sodium. Eleven months after treatment the heart sounds were found to be quite normal and had remained so. Thirteen months after the patient had been under treatment an exceptionally healthy child was born who had remained strong up to the present time. He justified his diagnosis by the history of the case and the success of the treatment. He quoted from the writings of Sir William Broadbent, Dr. Clifford Allbutt, and Professor Dieulafoy in support of his contention, and emphasised the importance of recognising syphilitic affections of the viscera by a reference to Wilks' and Moxon's lectures.—The PRESIDENT asked whether there was any notable change in the left ventricle.—Dr. PHILLIPS said it was generally recognised that aortic regurgitation was often the result of syphilis and referred to the case of a young man, an outpatient at St. Mary's Hospital, who had an aortic diastolic murmur and very severe attacks of angina pectoris. He had had syphilis and rheumatism and he improved under iodide of potassium, which, he observed, relieved not only syphilitic but also other cases of angina. Some time later the man died, having commissioned his mother to communicate with him (Dr. Phillips) and to ask that his body might be examined. Post mortem they found attached to the aorta a round gumma almost as large as a cobnut. There was hardly any degeneration of the aorta.—Dr. CHAPMAN, in reply to the PRESIDENT, said that the left ventricle was enlarged downwards but not upwards.

Dr. HUGH THURSFIELD read notes of a case of Rheumatic Periostitis with Subcutaneous Nodules. The patient, a boy, aged nine years, was brought to the Hospital for Sick Children in November, 1900, with a marked periosteal thickening of the inner aspect of the shaft of the right tibia and covered from head to feet with subcutaneous nodules. There was no evidence of congenital or acquired syphilis and there were several minor manifestations of rheumatic infection, stiffness, and pain in the hamstring muscles, and a small effusion into the knee-joint. The heart was very slightly dilated, but there was at no time any endocardial murmur. Rheumatic periostitis of the ulna had been recorded in 1889 by Dr. Archibald Garrod and Dr. J. A. Coutts, but was apparently a very rare condition. The appearance of nodules in any number without endocarditis or pericarditis was very rare; in fact, Dr. W. B. Cheadle regarded nodules in any number as certain evidence of severe cardiac lesions. Dr. W. B. Hadden had, however, reported one case to the Clinical Society in 1889, and there could be no doubt that they did sometimes occur, but as a general statement Dr. Cheadle's rule held good.—Dr. A. F. VOELCKER quite agreed that cases in which nodules existed were those in which grave cardiac mischief occurred. In the case of Dr. Hadden's to which Dr. Thursfield had alluded the boy had subsequently been re-admitted with a fresh attack of rheumatism and definite endocarditis.

ROYAL ACADEMY OF MEDICINE IN IRELAND.

SECTION OF MEDICINE.

Paracentesis Thoracis.—Complication of Nerve Diseases.—Friedreich's Ataxia.—Calcium Chloride.

A MEETING of this section was held on Dec. 14th, Sir C. J. NIXON, the President, being in the chair.

Dr. JOSEPH O'CARROLL exhibited a man, aged 65 years, admitted into hospital on May 25th, 1900, for dyspnœa, epigastric pain thirst, frequent micturition, and want of sleep due to dyspnœa. There was a soft systolic murmur at the cardiac apex; the urine showed a faint trace of albumin and some sugar, both by Fehling's test and fermentation. The man went to bed for about three hours in the evening, but could not lie down; he got up about midnight and spent the rest of the night dozing in his chair. A month after admission the right pleura was tapped; in a few days the left, and so turn about. His thorax had been tapped 18 times and a total of 67 pints of serous fluid had been withdrawn. He had not been tapped since Oct. 30th. He had now no dyspnœa, slept well on either side, and could take a little exercise in the hospital garden. The sugar in the urine was never higher than 5 per cent. and it had frequently disappeared altogether. The quantity of urine had averaged about 30 ounces, so that the case was hardly one of diabetes mellitus. Dr. O'Carroll thought the best diagnosis to be mitral disease with subacute dilatation of the heart, which had been cured or relieved by rest.

Dr. JOSEPH O'CARROLL also exhibited a man, aged 50 years, who fell head downwards over a balustrade whilst drunk. In a couple of days he was able to resume his occupation as a greengrocer. Three months later he came under treatment for weakness in his legs and arms. He presented increased knee-jerks, ankle clonus, and Babinski's toe phenomena; simple anæsthesia to touch over the legs and the trunk below the level of the nipples; a soft glossy-skinned aspect of the hands, with some simple anæsthesia and a slightly marked "clawing"; he was also markedly ataxic. The symptoms suggested a transverse myelitis at or about the level of the sixth and seventh cervical roots, but there had been no interference whatsoever with the rectal or vesical functions and at no time had there been any acute paraplegic symptoms.

Dr. TRAVERS SMITH exhibited an unmarried female, aged 24 years, suffering from Friedreich's Ataxia. As far as she could trace her family she knew of no other instance of the disease. She was healthy up to the age of 14 years. She then began to suffer from "nervousness," "trembling," and "staggering," and these symptoms became worse till at the age of 22 years she became unable to walk without a person on each side to support her.

Dr. NINIAN FALKINER said that calcium chloride was of great use in many cases of gastric ulcer, particularly in the relief of pain, and described the increased excretion of calcium compounds in the urine of a person who was taking six grammes of calcium chloride daily.—Dr. WALTER SMITH said that of the total calcium ingesta about 5 or 6 per cent. was excreted by the urine, leaving the rest to other channels, principally the bowel.

BOMBAY MEDICAL AND PHYSICAL SOCIETY.

Sunstroke.—Gangrene of the Tongue.—Suprapubic Lithotomy.—Ovariotomy.

A MEETING of this society was held at the University on Nov. 30th, 1900, Lieutenant-Colonel W. K. HATCH, I.M.S., Vice-President, being in the chair.

Captain J. B. SMITH, I.M.S., described a case of Sunstroke occurring as a complication in convalescence from pneumonia. The case was reported, not from any peculiarity in the pneumonia or in the sunstroke, but because sunstroke must be a very rare complication of pneumonia. The patient was a Mussulman police-constable, aged 19 years, who was admitted to the Civil Hospital, Shikarpur, on June 17th, 1894, with lobar pneumonia of the right lower lobe. The pneumonia was not severe and was unattended with rusty sputa. On June 26th, when he had been convalescent for several days, he went out and exposed himself to the sun, going to the privy, he said. At 4 P.M. he was noticed by his comrades to be "sleeping heavily," and the hospital assistant found that he was unconscious. On Captain Smith's arrival his temperature was 108·8° F. in the armpit, his skin was dry and pungent, and his eyes were congested. There was no new development of the pneumonia, Captain Smith therefore concluded that it was heat-stroke and had him rolled up in a wet sheet, which was constantly wetted and fanned by relays of men. An ice-bag was put to his head, to the back of his neck, and a lump of ice into his rectum. The temperature soon fell to normal, but it rose again when the wet sheet was discontinued. The sheet was therefore re-applied and kept on all night and next day until consciousness returned. Consciousness returned gradually and was not fully restored until 1 P.M. on June 27th—namely, about 21 hours after his illness was noticed. His temperature was slightly raised for several days afterwards. On August 1st he was discharged without the least trace of any ill-effect.

Lieutenant-Colonel HATCH reported a case of Gangrene of the Tongue. The patient was a woman, 45 years of age, who was admitted into the Jamsetjee Jejeebhoy Hospital on Nov 12th. Three months previously a swelling appeared on the dorsum of the tongue and gradually increased in size; for the last month there had been a serous and purulent discharge. The woman was very emaciated and quite unable to walk without assistance. Her mouth was slightly open and emitted a most fœtid odour; the surface of the tongue was of a dirty-brown colour and quite soft, so that a probe could be pushed deeply into its substance without causing pain. The gangrenous portion was removed and the surface was rubbed with nitric acid freely, but the patient gradually sank.

Lieutenant-Colonel HATCH also reported an operation for Vesical Calculus. The patient, a man aged 50 years, from Sholapur, had felt symptoms for two years. The original intention was to crush the stone, but it was found impossible to introduce a lithotrite owing to extreme rigidity about the neck of the bladder. Suprapubic lithotomy was therefore performed and the bladder was sutured, a drainage-tube being passed into it by the perineum. The calculi weighed 17·5 ounces.

Captain A. HOOTON, I.M.S., reported Four Ovariotomies performed on Hindu patients in the Sassoon Hospital, Poona, from December, 1898, to March, 1900. All made good recoveries. Chloroform was the anæsthetic employed. Silk sutures and ligatures were used, as silkworm gut or sufficiently thick silver wire was not obtainable at the time. In one case a buried continuous silk suture caused suppuration with considerable burrowing of pus.—Major W. H. BURKE said that he had known buried silk to give trouble as late as a year after insertion.

HUNTERIAN SOCIETY.—An ordinary meeting of this society was held on Dec. 12th, 1900, Dr. Newton Pitt being in the chair.—Dr. Hingston Fox read a paper on Recovery from Acute Disease: Notes on Prognosis. Diseases were divided into two classes, benign and malignant, according to their natural terminations. In benign diseases recovery depended on keeping the patient alive long enough, and this in the last resort upon the power of assimilating food. Some disorders were malignant because of the bad reaction of the subject—e.g., catarrhal pneumonia in a feeble person. Others were essentially malignant, like acute generalised tuberculosis. An outline was given of cases of fatal progressive pyrexial disease of ill-defined nature in which pneumonia or neuritis or dermatitis were developed. The chief clinical features of a case of acute disorder were then reviewed in the light of prognosis. Inheritance, the common habits of a family, had its influence. The patient's history might show alcoholism or other weakening causes. Sir Andrew Clark laid down that no healthy adult under 40 years of age ought to die from acute specific disease. Stoutness was an adverse factor. So was fear, especially in heart disease, whilst hope and an easy mind were much in favour of recovery. An entirely hopeless prognosis should scarcely ever be given. Illustration was offered of the force of will-power in recovery and the value of sleep. The presence of hysteria or of catamenial disturbance in women was of favourable augury. Blood conditions received some notice, especially the lividity that heralded convulsions; also the bearing of slow and quick heart-rate. Cheyne-Stokes respiration was not necessarily a fatal sign. Appetite and digestive power were important, but patients sometimes died with a clean

tongue. Free action by the primæ viæ and by the skin and kidneys was of good import; a dry skin was evil. Old practitioners acquired an intuitive prognosis apart from reasoning; the younger men were apt to think too much of the physical signs and too little of the patient. As Dr. H. G. Sutton used to say, they must "trust the human body."—Dr. F. J. Smith congratulated Dr. Fox on his paper. He agreed with him as to the gravity of a gradually increasing pulse-rate. He believed that frequent feeding in acute disease was bad and that prognosis was favourable when the patient desired food and had a clean tongue.—Dr. Fortescue Fox referred to cases of obscure pyrexial attacks to elderly people ending fatally. He agreed that the value of feeding acute cases according to the desires of the patient was often great.—Mr. Hope Grant said that there were cases in which the tongue could not become furred because of the absence of filiform papillæ.—Dr. Milligan referred to a child who suffered from chronic hyperpyrexia after an acute catarrhal pneumonia which lasted four weeks. The child eventually got quite well.—Dr. Newton Pitt pointed out that the appearance of a child was a very valuable item in prognosis and that the value of the pulse-rate varied with sex and age.—Dr. Fox replied.

BRITISH LARYNGOLOGICAL, RHINOLOGICAL, AND OTOLOGICAL ASSOCIATION.—The annual general meeting of this society was held at the rooms of the Medical Society, 11, Chandos-street, W., on Jan. 11th.—Mr. Lennox Browne and Dr. Kelson showed cases of Exostosis of the External Meatus; Dr. Abercrombie showed a case of Hyperostosis; and the President showed a case of Exostosis of the Tympanic Cavity.—In the discussion which followed operation was deprecated unless the growth were such as to lead to the accumulation of cerumen, &c., incapable of removal.—Dr. Banks, Dr. Dundas Grant, Dr. P. Jakins, Dr. Vinrace, Dr. Scatliffe, and Dr. V. H. W. Wingrave spoke.—Dr. Wingrave and Dr. F. J. Tresilian showed cases of Facial Palsy due to Middle-ear Disease.—Dr. Culver James showed a case of Middle-ear Disease with Complications.—The President showed a case of Epithelioma of the Maxillary Antrum and Excision of the Upper Jaw. Both specimen and patient were shown. The growth had been completely removed. There was no difficulty in swallowing and no sign of recurrence.—Dr. Banks, Dr. Wingrave, and Dr. Grant discussed the case.—Dr. Grant showed a case of Cyst of the Epiglottis.—Dr. Banks, Dr. Kelson, and the President related similar cases and discussed the treatment.—Mr. W. J. C. Nourse showed a case of Tertiary Syphilis with a Sequestrum in the Naso-pharynx.—Dr. Grant and the President discussed the case.—The President showed a case of Aphonia in a soldier, aged 23 years. The patient, who was in South Africa, took part in a long march, was said to have become unconscious and to have remained so for three days, and had been completely aphonic now for some months.—Dr. Tresilian showed a case of Osteo-sarcoma of the Maxillary Antrum.—The postponed discussion on Dr. Lennox Browne's cases of Epilepsy in relation to Adenoid Growths followed.—The President, Dr. Grant, and Dr. Banks related cases in which improvement had taken place after the removal of adenoids.

CARDIFF MEDICAL SOCIETY.—The ordinary monthly meeting of this society was held at the society's rooms on Jan 11th, Dr. R. Prichard being in the chair.—Dr. Barnardo showed a case of Polypoid Disease of the Right Antrum of Highmore. The patient was a woman, aged 35 years, who had suffered from dry throat and periodical headaches, and pus was seen to be running down the posterior nares. Since the operation of draining the antrum through the canine fossa and nose the symptoms had been much alleviated, but the shadow test showed continued opacity of the antrum.—Dr. Prichard, Mr. J. J. E. Biggs, and Mr. Lynn Thomas commented upon the case and Dr. Barnardo replied.—Dr. Owen Rhys showed (for Dr. C. T. Vachell) an advanced case of Pseudo-hypertrophic Muscular Paralysis in a boy, aged 12 years.—Mr. William Sheen read a paper on the Immediate Investigation and Treatment of Bullet- and Shell-Wounds. The paper was based on six months' experience as surgeon to the Yeomanry Field Hospital. A description of the Mauser wound immediately after infliction was given and the points to be investigated were indicated. The various types of shell-wound were described; and finally the results of certain rarer forms of injuries, such as those caused by expanding bullets and exploding cartridges, were detailed.—A discussion followed in which Mr. Lynn Thomas and Dr. Rhys Griffiths took part, and Mr. Sheen replied.—The President proposed and Dr. D. R. Paterson seconded the following motion:—

That this society congratulates its honorary secretaries, Mr. Lynn Thomas and Mr. William Sheen, on the eminent services they have rendered to their country during the war and rejoices at their safe return home.

The resolution was carried unanimously and the secretaries suitably replied.

LIVERPOOL MEDICAL INSTITUTION.—At the annual meeting of this institution, held on Jan. 10th, the following list of office-bearers and members of council was adopted:—President: Mr. Edgar A. Browne. Vice-Presidents: Dr. T. R. Bradshaw, Mr. W. Thelwall Thomas, Dr. Edward Adam, and Dr. J. M. Hunt. Honorary treasurer: Mr. Henry Briggs. Honorary general secretary: Dr. J. R. Logan. Honorary secretary to ordinary meetings: Dr. John E. Gemmell. Honorary librarian: Dr. H. Leslie Roberts. Council: Dr. James Armstrong, Dr. W. Macfie Campbell, Mr. W. T. Clegg, Dr. J. C. M. Given, Dr. A. M. Paterson, Mr. Andrew Stewart, Dr. James Barr, Dr. R. J. M. Buchanan, Dr. A. Craigmile, Dr. William Macvie, Mr. Edward Nicholson, and Dr. J. Lloyd Roberts. Pathological and Microscopical Committee: Dr. J. H. Abram, Dr. F. H. Barendt, Dr. Robert Boyce, Mr. R. A. Bickersteth, Dr. R. J. M. Buchanan, Dr. A. W. Campbell, Dr. C. Macalister, Mr. G. P. Newbolt, Dr. C. S. Sherrington, and Dr. W. B. Warrington. Journal Committee: Dr. F. H. Barendt, Mr. F. C. Larkin, Mr. G. P. Newbolt, Dr. A. M. Paterson, Dr. W. Permewan, Mr. W. Thelwall Thomas, Dr. Arthur Wallace, and the honorary secretaries to the ordinary meetings and pathological section.

GLASGOW PATHOLOGICAL AND CLINICAL SOCIETY.—A meeting of this society was held on Jan. 14th, Dr. Alexander Robertson, in the absence of the President, being in the chair.—Dr. Alexander Napier showed (1) three patients, a sister and two brothers, the subjects of Hypertrophic Cirrhosis of the Liver accompanied by splenic enlargement; and (2) a girl, aged six years, who had recovered from Jacksonian Epilepsy under the use of iodide of potassium.—Dr. Finlayson gave a bibliographical demonstration on Physiognomy with special reference to the physiognomy of disease.—Dr. A. Ernest Maylard showed (1) a specimen of Prolapse of the Rectum removed from a woman, aged 54 years, by the method of Mickulicz; and (2) a portion of Jejunum resected from a man, aged 25 years, who had been crushed between two lorries. The bowel was the seat of a circular rupture and the patient had succumbed to peritonitis which had commenced prior to operation.—Dr. E. Arthur Gibson showed (1) Interstitial and (2) Subcutaneous Myomata of the Uterus removed by hysterectomy.

BRISTOL MEDICO-CHIRURGICAL SOCIETY.—The fourth meeting of the session of this society was held in the Medical Library of University College on Jan. 9th, Dr. D. S. Davies being in the chair.—Dr. Patrick Manson, C.M.G., F.R.S., gave a most interesting demonstration of the Life-history of the Malaria Parasite and illustrated it by numerous microscopic preparations, lantern slides, diagrams, and blackboard drawings.—Upwards of 120 members and visitors were present.—At the close of the meeting a hearty vote of thanks to Dr. Manson was carried with applause.

THE LATE MR. A. W. SHEPERD.—Mr. Albert Wilberforce Sheperd died at his residence, Cowbridge, Glamorganshire, on Jan. 4th, after a short illness. The deceased received his medical education at the Carmichael College, Dublin, and took the qualifications of L.R.C.P., L.R.C.S., and L.M. Irel., in 1883. After holding a resident appointment at the City of Dublin Hospital, he was appointed district medical officer at Moriani, Assam, India. On his return to England about 10 years ago he practised at Cowbridge, where he was medical officer of health of the Cowbridge Urban District. The deceased took a great interest in the volunteer movement and was surgeon-captain to the 2nd Volunteer Battalion of the Royal Welsh Regiment. Mr. Sheperd was highly esteemed and very popular in Cowbridge, and much sympathy is felt there for his widow and two young children.

Reviews and Notices of Books.

La Vie de Pasteur. RENÉ VALLERY-RADOT. Paris: Libraire Hachette et Cie. 1900. Pp. 692.

"L'ŒUVRE de Pasteur est admirable, elle montre son génie, mais il faut avoir vécu dans son intimité pour connaitre toute la bonté de son cœur." These words were written by Dr. Roux, Pasteur's colleague and friend. They are quoted on the title-page of "La Vie de Pasteur" and give very suggestively an idea of the spirit in which the book has been written by M. René Vallery-Radot, the son-in-law of the subject of the biography.

The first impression received on reading the book is a hope that it will soon be translated into English so that it may be more readily accessible to the English people, but on reflection it becomes evident that a good translation would be almost impossible. A mere transliteration, a turning of French words into English equivalents more or less exact, would give no just idea of the work and might easily prove absurd; it would necessarily destroy much of the charm of the book, which consists largely in the brief and touching sketches it contains of the domestic life of Pasteur and of his most intimate personal friends. Here and there glimpses are given of that happy and united family life which is probably not uncommon amongst French people, but the details of which are so carefully guarded that they are rarely seen by foreigners, and very rarely by Englishmen, who, proud of "home," often profess to pity a people who have no such word and do not appreciate the significance of the association which a Frenchman has with "famille." The associations of family ran like a golden thread all through the life of Pasteur. One other thing also greatly affected him, as it did all his thoughtful fellow countrymen—the great national catastrophe of 1870. The pitiable condition of France under the foreign invader made the iron to enter into his soul. He became for a time unable to continue his scientific researches and cast about for a solution to the problem as to why France had not found in her hour of need men fit to cope with her difficulties. In the pamphlet which he wrote on this question he ascribed the lack of really great men to the neglect that the country had shown to those who devoted themselves to scientific work. At the end of the eighteenth century, he argued, the country in her time of stress had been saved by her men of science. They had taught how the saltpetre necessary for the manufacture of gunpowder could be obtained by methods hitherto unknown, and by what new processes cannon could be quickly manufactured and how offensive arms could be rapidly provided. Napoleon himself felt the power and the use of applied science and after the battle of Waterloo proposed to go to America to devote himself to such work. Napoleon III., on the contrary, had neglected science, and on one occasion Pasteur wrote with extreme warmth on the action of the Government in this respect, a point to which reference will be made later. The strong impression produced on Pasteur by the disaster of 1870 was shown by the way in which he returned to the University of Bonn a degree which had been conferred on him. It was shown by the fact that towards the end of his life he declined to entertain the idea of receiving a German Order. It was shown by the depth of his gratitude and the greatness of his surprise at the reception which he met with in England as the foremost representative of France at the International Medical Congress of 1881, when at the opening meeting held in St. James's Hall he was greeted with the warmest enthusiasm. On this visit he met the German Crown Prince, and he appreciated the graceful tact of Sir James Paget in not asking him to be presented to the prince, and also the way in which that noble-minded gentleman introduced himself to Pasteur and addressed to him the few words of friendliness and peace which he recorded in a home letter written at the time and which he ever afterwards remembered. Patriotism and family affection were amongst the strongest characteristics of Pasteur, and these qualities may possibly be ascribed in part to heredity.

Jean-Joseph Pasteur, the father of the subject of this biography, was a man of strong character. Born in 1792, he became a conscript in 1811, and fought in Spain during the two following years; he returned to France in 1814, and in that year the regiment in which he served (3rd Infantry) distinguished itself at Bar-sur-Aube and Pasteur became a sergeant-major and received the Cross of the Legion of Honour. After the abdication of the Emperor in 1814 he obtained his discharge from the service and returned to Salins, where the Royalist mayor ordered the "Brigands of the Loire"—as he called the soldiers of the Empire—to give up their swords. Pasteur obeyed, but when he found his sword in the possession of a policeman he wrested it from him. Some trouble followed, but the commander of the Austrian forces, which still held the town, sympathised with Pasteur, who was not afterwards interfered with. An "old soldier" although but 25 years of age he settled down to the business of a tanner, and across the stream—miscalled la Furieuse—he soon found his fate in the form of a young gardener who worked there from early dawn. It was Jeanne Etienne Roqui. She came of a family well known in the town and could trace her descent from a vine-grower who lived in the middle of the sixteenth century. The members of her family had the reputation of being so much attached to one another that "to love like the Roqui" had become proverbial. These young people were married in 1815 and in 1822 a son, Louis Pasteur, was born. He received the early part of his education at Arbois. The Pasteur family had amongst their acquaintances several men of some culture who took an interest in the young student. Amongst these was Dumont, a retired army surgeon, on whose advice young Pasteur was sent to Paris to continue his studies. He was then only 16 years of age and the great city terrified him. He became so homesick that his father brought him back for a time; he afterwards went to Besançon, where he took the degree of *bachelier ès lettres* in the year 1840. At the examination he did not greatly distinguish himself; he pleased the examiners in Latin, in Greek, and in rhetoric, but did only moderately well in history and geography. After leaving Besançon he went to Dijon, and in the examination for *baccalauréat* in sciences and mathematics he came out fourteenth in the list of 22 candidates. He was "weak" in chemistry. In 1842 Pasteur returned to Paris, where he attended lectures at the Lycée Saint-Louis and those of Dumas, the chemist, at the Sorbonne. He worked very hard, suffered from headache, and lived with great frugality. His father gave him some very good advice, counselling him to dine well at least twice a week with his great friend Chappuis and adding that he had bottled some 1834 wine which should be kept for their return. There was, he said, more spirit in that wine than in all the books of philosophy which had ever been written, but he cautiously added that it would not help to solve mathematical formulæ.

The companionship of Chappuis was a great help to Pasteur. Left to himself he devoted all his time to study and was constantly in the library. With his friend he discussed during their walks those problems which interested him, and his ideas became clear when he examined them from different points of view. The first great problem which he wished to solve had reference to a mystery about tartaric acid and its conduct with polarised light, and from this inquiry he hoped to be enabled to get a general insight into the relation between crystalline form and the polarisation of light. It was a great work and the results which he

obtained startled Biot, the great chemist, who immediately saw the possibilities of scientific advance which Pasteur's discovery had made possible. For 30 years Biot had worked at the subject, and now at the age of 74 he found that this student of 25 had made a discovery which would revolutionise chemistry. Although incredulous at first, Biot repeated Pasteur's experiments, proved their results, and recognised their importance. He welcomed the discovery with a large-hearted sympathy and ever after he was Pasteur's most devoted friend.

In 1849 the professorship of chemistry at Strasburg was offered to Pasteur. He accepted the appointment but felt lonely. He immediately fell in love with a daughter of M. Laurent, the principal of the University, and proposed for her hand a fortnight after he first saw her. They were soon married. Fortunately his wife was willing that his work should continue to occupy most of his time and of his energy.

The family party at Strasburg was, unluckily, soon broken up. In the year 1850 the clerical party became for a time dominant in France and Romieu was appointed to visit the universities. M. Laurent fell under his displeasure and was removed. Pasteur remained. In 1852 he undertook quite a romantic quest in search of crude specimens of tartaric acid. Never, as a contemporary writer said, was treasure, never was beauty more ardently sought. The conditions under which racemic acid had been produced were not understood and Pasteur journeyed to Leipsic, Freiburg, Vienna, and Prague to procure specimens which had been obtained under different conditions. His letters to his wife contained accounts of his journey and ultimately he was able to send a telegram to Biot to say that he had converted tartaric acid into racemic acid So at length Pasteur established the existence of the four tartaric acids: (1) which turned the plane of polarised light to the right; (2) which turned the plane of polarised light to the left; (3) the combination of the two (or racemic acid); and (4) which was inactive to light. This was a great discovery and one not obtained by accident but as the result of carefully devised experiment. In recognition of these researches Pasteur received the Ribband of the Legion of Honour. In the autumn of 1857 he was made professor of the newly-established Faculty of Sciences at Lille. This appointment marked a distinct epoch in the scientific life of Pasteur. Until then all his researches had been suggested by his own brain, the problems were those set to him by himself. From this time the problems were thrust upon him. The great town of Lille was a manufacturing centre and the production of alcohol from the fermentation of beetroot was an important industry of the place. Some of the manufacturers had been much troubled with a difficulty in the process of their operations and they were quite unable to account for it. One of them sought the advice of Pasteur, and thus he began the study of fermentation. The *savants* had hitherto considered fermentation to be a strange and obscure process. The theories of Berzelius and of Liebig were generally accepted. But they explained nothing. Fermentation was supposed by one of these philosophers to be due to the action of contact, "catalytic influence"; according to the other it was due to the presence of a "ferment," a readily decomposable organic substance. So the theories may be briefly put. Pasteur showed that the formation of alcohol from sugar was due to the vital action of living organisms, that the changes were produced by organised cells.

From 1860 to 1864 Pasteur was engaged chiefly in investigating the question of spontaneous generation, but he spent some time also in studying the diseases of wines. Biot and Dumas both thought that the inquiry as to the possibility of spontaneous generation was a barren subject—an insoluble problem and therefore not one on which time should be spent. But the question was one which it was impossible for Pasteur to neglect. The problem, he thought, must be settled. It stayed the progress of science. The *savants* were lost in a valley. Biot said there was no way out. Pasteur found it necessary to try to find one. And Pouchet of Rouen had claimed that he had proved the occurrence of spontaneous generation. This was too much for Pasteur. He began a new study—that of the microscopic organisms of the air. It was a long business and took him far afield, for he investigated the mountain air of Chamounix. It was a fierce fight between the *savants*. It is needless to go over the battle ground.

In 1864 the Mayor of Arbois asked Pasteur to investigate the cause of the trouble which the vine-growers had experienced in keeping their wines. Facilities for the investigation were offered, but Pasteur declined to accept the generosity of the town and made his own arrangements for the research. The trouble was a very real one and had far-reaching results, for the English market was becoming closed to wines which were liable to ready decomposition. Pasteur came to the conclusion that the wines were spoiled by a secondary fermentation and that this source of danger could be eliminated by raising the wine for a short time to a suitable temperature.

The next great undertaking of Pasteur was an investigation of the disease of silkworms which threatened entirely to ruin the silk industry and had already caused a loss of something like £4,000,000. Pasteur felt great diffidence in undertaking the task which was assigned to him. He had never touched a silkworm and knew nothing about their culture. The literature of the subject he found of little use to him, and on going to Alais to study the disease on the spot he found, as might be expected, that it was difficult to find any definite fact in the deluge of words which was poured into his ears. But all sorts of remedies were recommended and the word "miasm" was much to the fore. Pasteur studied the silkworms microscopically and obtained some healthy eggs from Japan that he might compare healthy worms with those which suffered from the disease. His work for a time was interrupted by the death of his father, but he soon returned to continue his investigation; and he was able to show that the disease was the result of a microscopic organism and also that eggs derived from a healthy source produced worms free from the disease.

Pasteur's next work was literary. He edited Lavoisier's works at the urgent request of Dumas. The book was much praised by Sainte-Beuve. Soon after this Pasteur spent a few days at Compiègne at the command of Napoleon III whose guest he became. This visit must have been one of great interest both to the host and to Pasteur. To Pasteur the sight of an Imperial hunt must have been quite a new sensation. But he was not satisfied to do without work. The Imperial cellar contained a few—very few—bottles of wine which had "gone wrong" and he was pleased at the opportunity afforded him of finding out how this had come about. The Empress was also greatly interested in the objects seen under the microscope and a drawing-room lecture was given at her five o'clock tea. It was a matter of wonder both to Napoleon and to the Empress that Pasteur had made no attempt to obtain a "legitimate profit" from the commercial application of his labours, but he told them that in France the *savants* did not think it seemly to act in such a way. But the researches of Pasteur in regard to the disease of silkworms is said to have been the means of saving to France an amount of money equal to that which was paid to Germany as part of the price of peace.

Pasteur was a man possessing the strongest human sympathy and the greatest kindness of heart. A remarkable instance of the display of these qualities was shown by the action he took when he heard that his old friend Claude Bernard had retired into the country overwhelmed with dyspepsia and suffering from great mental depression.

Pasteur, hoping to be able to raise his spirits, devoted himself to a renewed study of his works and wrote an article for the *Moniteur Universelle* ("Claude Bernard: Idée de l'importance de ses travaux, de son enseignement et de sa méthode"). The article had the happiest effect, Bernard's condition immediately improved; he was filled with gratitude and was soon well enough to return to his work.

At the Great Exhibition at Paris in 1867 the grand prix was awarded to Pasteur and to 62 others; the prize-giving ceremony was one of the most imposing scenes amongst those of the Second Empire. Gérôme, Meissonier, and Ferdinand de Lesseps were present and received due honour. Art and industrial progress received greater acclamation than that accorded to science. At this period the laboratories were ill-placed and unsuitable for their purpose. Situated in cellars, they were not unfitly described as the "tombs of the *savants*." Pasteur, moved by these facts, addressed a note to the Emperor pointing out the industrial value of the investigations which he himself had carried out and showing what a vast and fertile field for further research had been discovered by his researches. A full investigation of the phenomena of putrefaction and for the study of infectious diseases necessitated spacious and isolated laboratories. The pathology of gangrene and experiments in inoculation could only be studied in specially constructed places. The transport of butcher's meat had a distinctly commercial aspect. In Europe it was sold at an exorbitant price, in Buenos Ayres it was only too plentiful. It was a point worthy of experiment to see whether it was possible to invent some method for its transport. Pasteur was led to hope that laboratories would be built by the Government, but he was disappointed. Whereupon he wrote a very strong article. The article was naturally refused by the official *Moniteur*, but it appeared first in the *Revue des cours scientifiques* and afterwards in the form of a pamphlet. It had an immediate effect and the Emperor took up the question warmly. The following year Pasteur had a severe illness which was diagnosed as cerebral hæmorrhage. He was then only 46 years of age, but for a time it appeared as if his work were over, and he grieved that there was so much left for him to do. The general impression evidently was that the new laboratory, which was then in the course of construction, would not be wanted, and Pasteur, on asking his wife how the building was getting on, was grieved to hear that the work had been suspended. When the Emperor was told of this he ordered that the work should be continued at once. Later, when Pasteur was recovering from his illness, Napoleon III. placed at his disposal the Villa Vicentina, a house near Trieste which had once belonged to Elisa, sister of Napoleon I., by whom it had been left to her daughter, Princess Baccischi, from whom the Prince Imperial inherited it. At the Villa Vicentina Pasteur superintended the culture of silkworms, which had failed miserably before his advent. Just before the fall of the Empire Napoleon had placed him in the list of new senators, but the decree was never issued.

Of the effect of the war on Pasteur mention has already been made. The unnecessary injury done by the Germans to the Sèvres porcelain factory and the destruction of the manuscripts there amongst other things violently affected him. His search for his son, who was serving in Bourbaki's army, was a romance, but it is not possible to tell the story here.

The fact that Pasteur after his attack of cerebral hæmorrhage was able to do excellent work is very remarkable. Much of the work of his later years was that which attracted most the attention of foreigners. After the war he was engaged for a time in the investigation of the manufacture of beer, which had not up to that time been a favourite beverage with his countrymen. At a later period he was elected to the Académie de Médecine. Physicians and surgeons alike had learned much from his researches. Lister founded on them a new system of dressing wounds which in a few years revolutionised surgery, was the means of saving thousands of lives, and for the first time made it reasonable to undertake operations which had previously been carried out only by the most "enterprising" surgeons to the great risk of the lives of their patients. Both Lister and Tyndall gladly acclaimed the greatness of the results of the teaching of Pasteur. Some of the French physicians, it is true, rather disliked Pasteur's intrusion into their domain, but his teaching has survived any prejudice which it may have excited.

In the year 1880 Pasteur began a series of experiments in regard to chicken cholera and to the attenuation of its virus, and at a later date he undertook those investigations concerning hydrophobia which perhaps of all his work caused the greatest immediate popular sensation. The details of this work and of the origin and work of the Pasteur Institute are so familiar that it is not necessary to do more than mention them.

Pasteur continued to work till November, 1894, when the symptoms of his mortal illness manifested themselves, but he lived until the following September, when he breathed his last surrounded by his family and by his friends.

It is not possible to give in a review any adequate idea of the interest of M. René Vallery-Radot's book. The subject of the biography was one of the greatest men of the century in which he lived, and the book has been written from ample material and with loving care. It is well worthy of careful study. To the casual reader and for purposes of reference a good index would have been a great boon. A complete bibliography of the published works of Pasteur should also have been added to the book. These omissions it is to be hoped will be made good in future editions of the work.

Somnambulismus und Spiritismus. (*Somnambulism and Spiritualism.*) By L. LOEWENFELD. Wiesbaden: J. F. Bergmann. 1900. Super royal 8vo, pp. 57. With two illustrations.

THIS little book is the first of a series of pamphlets edited by Dr. Loewenfeld of Munich and Dr. Kurella of Breslau which is addressed to "the educated of all classes" and in which questions relating to the borderland between the spiritual and material existences are to be discussed. While there is a certain fascination about most borderlands, the one with which the volume before us is concerned is particularly interesting because it is here that the lands which science has already explored march with a region which has only recently begun to be investigated. We refer to the somnambulistic state, a term which in the somewhat wide sense in which the author uses it includes the hypnotic condition and certain phases of hysteria. Dr. Loewenfeld does not define somnambulism, but we gather that he regards it as a condition in which the area of mental activity is narrowed in some directions but extended in others—that is to say, a condition in which some of the senses are asleep while others are in a state of hyperæsthesia. Consciousness, apparently, may be partially or wholly in abeyance. Though the author believes that the most familiar form of somnambulism—ordinary sleep-walking—indicates a morbid state of the nervous system, he does not think it is to be regarded as an early symptom of hysteria. He demolishes the popular belief in the miraculous powers exhibited in that condition and concludes from his own observations that the sleep-walker does nothing in sleep which he could not do awake were his faculties concentrated to the same degree on the work in hand.

Of the hysterical variety Dr. Loewenfeld has little to say. It is responsible, he believes, for some of the cases of

so-called dual existence of which Azam's case of Felida X. is one of the most remarkable.

The author's principal contention is that in hypnotic somnambulism is to be found an explanation of most of the manifestations of spiritualism. To the abnormally sensitive ear of the hypnotised subject, for example, sounds are audible which cannot be detected by the bystander, such as the "involuntary whispering" by which thoughts are "read"; his brain is sensible to impressions (as in telepathy) to which it is impervious in his waking moments. In short, while we do not know all the channels by which these impressions are conveyed nor the means by which they are produced Dr. Loewenfeld feels justified in attributing to the abnormal acuteness of the somnambulist's senses much that the spiritualist ascribes to supernatural agencies. Table-turning and rappings he lightly dismisses as hocus-pocus; the phenomena which he discusses seriously are telepathy, clairvoyance, the power of seeing through opaque substances, that of talking in a language unknown to the speaker, and the transposition of senses. He does not think that the last two have been proved to have occurred; and with regard to the third, he would also declare himself an unbeliever were it not for one or two of Richet's experiments, the results of which were so striking that he is compelled to admit that they could not be due to chance. As to telepathy and clairvoyance, he unwillingly admits their existence, holding that while most so-called examples are due to deception or coincidence, there are some which cannot be thus accounted for—which are, indeed, in the present state of our knowledge inexplicable. We cannot quite understand the evident reluctance with which the author makes these admissions. It seems to arise from a fear that they may be regarded in some sort as a concession to his spiritualistic opponents against whom this work is chiefly directed. The value of the book is considerably impaired by this unscientific attitude which allows him to be more alive to the weak points in the spiritualistic arguments than to those of his own theory. These fears are quite superfluous, for while waiting for a rational explanation we are not compelled, even provisionally, to accept the one which the spiritualist proposes. The book is a very interesting introduction to an important subject.

Mosquitos and Malaria: A Summary of Knowledge on the Subject Up-to-Date; with an Account of the Natural History of Some Mosquitos. By CUTHBERT CHRISTY, M.B., C.M. Edin., Special Medical Officer on Plague Duty for the Indian Government; late Senior Medical Officer, West African Frontier Force, Nigeria. With five full-page Plates. London: Sampson Low, Marston and Company, Limited. Bombay: The *Times of India* Press. 1900. Demy 8vo, pp. xii–80. Price 6s. net.

THE researches of Grassi, an Italian naturalist, and the experiments of Bignami, subsequently to the publication of Ross's papers showing that special mosquitoes were needed as the hosts of the malarial parasites, succeeded in affording positive evidence of the inoculation of malaria by mosquito bites, and this result was confirmed by the experiments of Bastianelli, Grassi, and others. The Royal Society has also issued a series of reports into the origin and character of malaria, embodying information gained on both coasts of Africa—West and East—which are of considerable scientific and practical value.

The subject of the connexion between the prevalence of mosquitoes and the prevalence of malaria which is dealt with in this volume has been so frequently referred to and discussed in the pages of THE LANCET and elsewhere that we may fairly assume our readers to be acquainted with the general results, at any rate, of the numerous investigations which have been taking place. These researches make up one of the most interesting and important chapters in the history of modern scientific medicine. Nor is their interest circumscribed within the limits of medical science only, for the subject also offers an interesting field of study to the naturalist and the microscopist, and, in its practical bearings in connexion with public health, it more especially concerns the statesmen and population of the British empire. Notwithstanding that malarious diseases are so prevalent in India and in some of our possessions abroad, it is the Italian school of medicine which laboured longest and most persistently in the study of malaria—indeed, in this respect it has long held a foremost position. Since Laveran's discovery of the malarial parasite in 1880 the subject has been pursued on all sides with keen interest. This took a fresh start at the time that Major Ronald Ross, I.M.S., by a series of skilful and carefully conducted observations gave precision to the mosquito-malarial theory of causation, which had been previously and provisionally elaborated in 1893 by King in America. Since that time, as our readers are aware, there has been a rapid and progressive advance in our knowledge.

The introductory chapter on the Malarial Parasite and that on Ross's discoveries in 1897–98, followed by an account of Dr. C. W. Daniels's investigations in Calcutta in 1899 and of the work of the Italians are very clearly and succinctly written. At the stage at which Dr. Daniels undertook his inquiries and wrote his report, he was able to say that Ross's discoveries had put observers on the high road to proving that the mosquito conveyed malarial fever from man to man, although they did not prove that it was the only way in which the fever could be carried. Since Daniels wrote his report, however, much has happened. Dr. Christy deals very clearly and well with the natural history of mosquitoes in general and with all that is known about our particular enemy—the genus anopheles. Beyond the recognised four stages of development—viz., that of the egg, the larva stage, the pupa or nympha stage (all of which are passed in water) and the fourth or adult winged stage, there is much that still remains to be known about the natural history of mosquitoes. It is a more intimate knowledge of the life-history of the mosquito, and especially of the anopheles, in all the four stages that is required, and the author calls the attention of observers to some of the main points needing further elucidation. The chief aim which Dr. Christy had in view in publishing his little work was, he states, to stimulate the interest and to enlist the energies of naturalists, medical men, and others throughout the world. At pages 39 and 40 he gives a very useful table of comparison between the culex and anopheles. In the succeeding chapters he treats of the methods of destruction of mosquitoes and the etiology of malaria and its prophylaxis. The series of plates with their accompanying brief explanatory notes are excellent.

The object of the present work, its author tells us, is to supply, in the form of a small cheap handbook, a concise and convenient summary of our knowledge—the literature of which would, if it were all collected together, make up a little library in itself. The author has performed his task excellently well and if his volume does not include everything known and published up to the present moment, that is simply attributable, as we have said, to the rapid progress which is being made.

Gynæcological Operations, Exclusive of those Interfering with the Peritoneal Cavity. By SKENE KEITH, M.B., F.R.C.S. Edin. Illustrated with 44 figures. Edinburgh and London: Young J. Pentland. 1900. 8vo. Pp. 118.

THIS little book is intended as a companion to the author's "Text-book of Abdominal Surgery." It contains a good and concise description of the essential details of the gynæcological operations usually performed through the vagina. Mr. Skene Keith enters a protest against the excessive preparatory measures which at the present time are considered essential by many operators even before the most

trivial operations. No doubt in the private practice of surgeons many of the elaborate precautions usually taken may be neglected, but in hospital practice, where the operator is dependent to some extent upon others, it is essential that the minutest details should be observed, so that carelessness in slight matters may not lead to carelessness in great matters. It is, moreover, only by the jealous care that a modern surgeon takes over his antiseptic or aseptic precautions, as the case may be, that he is able to inculcate these important principles upon his students and so to endow them with the most important attribute of a good surgeon, "the antiseptic or aseptic conscience." The descriptions of the various operations abound in practical details, and are in many instances more clearly and graphically described than in most text-books. The author prefers a Sims's speculum and Sims's position, a fact that must be borne in mind by those who are more accustomed to the dorsal position, in reading the account of the operations.

The practice of drawing down the uterus to the vulva is condemned, but we must confess that although we are in the habit of drawing down the uterus in the majority of cases when operating upon it through the vagina we have yet to meet with the rise of temperature and evidence of pelvic inflammation which the author says are often the result of this manœuvre. It seems to us more likely that such unfavourable results are due to the operation performed rather than the method. Mr. Keith fails to note the greatest danger—viz., the possibility of rupturing a pyosalpinx or a small ovarian cyst if the uterus be drawn down without a careful preliminary bimanual examination in all cases. We are glad to see that the old-fashioned method of plugging the vagina with a kite tail is rightly condemned. The practice of plugging the interior of the uterus after the operation of curettage appears to be an unnecessary complication in an ordinary case, while the application of pressure forceps to the pedicle of a fibroid polypus is a superfluous precaution in our experience. We see no reason why a large Bartholin's cyst should not be cleanly dissected out as well as a small one, and what we have seen of the method recommended by the author—viz., incision of the cyst and the use of scissors—in the hands of other surgeons would not lead us to adopt the plan. Although we cannot quite agree with all the author says, yet the book is well worth reading by those interested in gynecological surgery, and will prove of much assistance to the inexperienced in such operations.

The Great Famine and its Causes. By VAUGHAN NASH. With Eight Photographs by the Author, and a Map of India showing the famine area. London, New York and Bombay: Longmans, Green, and Co. 1900. Pp. 262. Price 6*s*.

THIS volume consists of the series of letters which originally appeared in the *Manchester Guardian* during the 11 weeks which Mr. Vaughan Nash spent in India. He must have occupied himself with untiring energy to have travelled and witnessed all that he did in that distressed country, and to have gleaned and compiled all the information which he has managed to set forth in this volume. The letters describe with a good deal of graphic force the scenes which the author witnessed as the panorama of suffering unfolded itself, together with the impressions to which they gave rise. Their perusal is necessarily a sad and painful experience. The history of India of recent years has been a terrible record—one of plague, pestilence, and famine. The native population is enormous and for the most part sunk in poverty at the best of times, and more largely dependent even than the population of other countries upon the regularity and normality of its meteorology—i.e., upon the recurrence of its seasons in due course—for its food-supplies. When, as occasionally happened in the history of the late famine, the ravages of cholera are superadded to those of famine, and starving crowds of enfeebled people have had to leave relief works and camps and seek safety in flight for fear of being stricken with a more rapid and dire disaster than that of famine, it is not easy to conjure up a more terrible picture. The author has a good deal to say about such subjects as Indian organisation, how India is fed, famine preventive measures, debt and expropriation, and the land revenue system, some of which matter is interesting. But these are affairs of State policy and government about which our readers must consult the book for themselves, for they do not readily lend themselves to any brief analysis, nor do they fall within the purview of the medical critic. But we may remark that the views of anyone founded upon a brief residence in India with a relatively cursory experience and necessarily inadequate consideration of such big subjects are mainly intended for the information and enlightenment of readers in this country. Whether they happen to be right or wrong they are not likely to carry any great weight with the Indian Government and its officials.

Consumption: its Nature and Treatment. By WILLIAM H. SPENCER, M.A., M.D. Cantab., M.R.C.P. Lond. London: Henry J. Glaisher. 1900. Pp. 83. Price 1*s*. 6*d*.

DR. SPENCER'S temperate views on the nature of consumption are explained in this little brochure. He lays it down that the bacillus plays only a secondary part in the determination of the disease. The depraved tissue habits which provide the suitable conditions for its growth operate in the same direction as the agent which finally compasses the ruin. The only certain method of destroying the bacillus within the body is to deny it the conditions which are essential to its development. And it is with the various methods of withholding these conditions that the author chiefly concerns himself in these pages. In addition to ordinary hygienic measures, curative and prophylactic, Dr. Spencer has great faith in the efficacy of the so-called antiseptic inhalations, not for the purpose of directly destroying the bacillus, but of indirectly effecting this object by rendering the animal matter on which it thrives an unsuitable nutritive medium. The reader is not, however, supplied with the details of treatment.

LIBRARY TABLE.

Messieurs Vigot Frères of Paris send us a little book by M. de Frumerie, entitled *La Pratique du Massage*. It is a collection of clinical lectures on instruction in massage given to the classes of hospital attendants, both male and female, of the Paris hospitals during 1899-1900. The book is an octavo volume of 146 pages, contains 31 figures and diagrams, and costs two francs. Commencing with a short historical synopsis of the art of massage the author passes on to give a description of the different manipulations, and continues by giving an account of the physiology of the muscles and a description of massage of the different parts of the body. There is also a chapter on massage of recent fractures. Of course no one can learn massage purely from a book, but M. de Frumerie's instructions will prove of value to anybody who is desirous of learning something about massage before he enters on his practical class.

From Messieurs G. Carré and C. Naud of Paris we have received a book by M. H. Triboulet, physician to the hospitals, and M. F. Mathieu, physician to the Bureaux de Bienfaisance. The title of the book is *L'Alcool et L'Alcoolisme*, in one volume, square octavo, with 254 pages, and the price is 5 francs. The preface states that the book does not pretend to be more than a compendium for the use of those who know of facts connected with the alcohol question. Certain phases of the question have been more dwelt upon than

others, such as the manufacture of alcoholic drinks in their relation to drunkenness, the toxicology of alcohol, and the general physiology of the matter. The mental pathology of alcoholic poisoning is not dealt with. The first chapter gives an account of the word "alcohol" both in its restricted meaning as implying ethylic alcohol and in its wider chemical meaning of a series of alcohols. Then follows an account of the various alcoholic drinks such as beers, wines, ardent spirits, liqueurs, and *apéritifs*, including absinthe. Chapters on the toxicology and physiological effects of fermented drinks follow and then the authors pass to consider the pathology of alcoholic intoxication. This chapter concludes with a section on treatment, both therapeutic and moral. Statistics of the consumption of alcohol in different states are next given, and the book concludes with a succinct account of the various prophylactic measures for combating alcohol in different countries and a scheme of prophylaxis drawn up by the authors. For a book of no great size this little work contains a vast amount of information upon a subject which is possibly of more vital importance to the health and growth of nations than any other. M. Triboulet and M. Mathieu's suggestions are well worth pondering upon. Shortly, they propose: 1. Special legislation which, however, must be backed up by private effort. All alcohol should be taxed except that employed in industries. 2. Taxes on coffee, cocoa, and tea should be reduced as much as possible. All profits accruing from the taxation of alcohol should be employed in works of charity. 3. No alcoholic drinks should be allowed to be sold in barracks, arsenals, or railway works. 4. In large towns public-houses should be closed at 11 P.M., except those near theatres and railway-stations, while in small towns and villages they should be closed at 9 P.M. in winter and in summer six hours before sunrise. 5. No person under 18 years of age and no drunken person should be served. All establishments where drinks are sold should be compelled to be well ventilated. Civil legislation should provide establishments for the treatment of the habitual drunkard, and the State should only allot its posts of employment among members of temperance societies; while owners of property should be made to see that the houses for which they receive rent are in a proper sanitary condition. M. Triboulet and M. Mathieu allow that the problem is far from easy to solve, but they maintain that their system is worth trying.

Encyclopédie Scientifique des Aide-Mémoire.—Under the above heading Messieurs Masson et Cie., the Paris publishers, are issuing a series of handbooks to various departments of medicine and the kindred sciences. We have before us three of the volumes, which are octavo books, price 2 fr. 50 c. each. The first, *Maladies des Voies Urinaires*, by M. Bazy, surgeon to the Beaujon Hospital, deals with the general and symptomatic therapeutics of these diseases and with the operative surgery which is sometimes necessary for the relief of diseased conditions of the urinary organs. Two volumes have already appeared of this series, the first dealing with exploratory operations and those of urgency, while the second deals with symptomatology. The volume under review is the third, and a fourth, upon special therapeutics, will complete the series. The present volume is divided into three parts. In the first M. Bazy treats of the various drugs which affect the urinary organs and secretion. Next he passes to the consideration of special therapeutics and treatment, such as that of hæmaturia, urinary infection, and urinary insufficiency, together with the treatment of retention. In the final portion of the book a description of various operations upon the urinary organs is given. The book is very clearly and simply written and though, of course, it, as well as the whole series, presupposes knowledge on the part of him who consults it, it should be found to be, as the name suggests, a valuable refresher of the memory. The second volume before us is entitled *Analyse Biologique des Eaux Potables*, by Dr. J. Gasser. There is but little doubt that the purity of the water-supply is one of the most, if not the most, important factors in the health of a community. Beginning with an account of the apparatus necessary for bacteriological examination Dr. Gasser proceeds to give an account of the methods of estimating the microbes present in a given sample of water and concludes with a description of the pathogenic organisms carried by water as well as the more common organisms which exist in water, such as bacillus ramosus. The third volume before us bears the title *L'Insuffisance Hépatique* and is by Dr. A. Gouget, physician to the hospitals. It deals in a plain manner with the signs, symptoms, causes, and treatment of the condition called by Murchison "lithæmia." As a *résumé* of a very common and yet complex condition, one, moreover, which is by no means easy always to treat successfully, this little book may be recommended.

Über die Ursache des Alters: Grundzüge der Physiologie des Wachsthums mit besonderer Berücksichtigung des Menschen. (*The Determining Causes of Age: Elements of the Physiology of Growth, with especial Reference to the Human Subject.*) By Dr. M. MÜHLMANN. Wiesbaden: J. F. Bergmann. Glasgow: F. Bauermeister. 1900. Pp. 195. Price 5 marks.—Dr. Mühlmann has for several years been making observations on the weights of different parts of the human body and the study of these data has led him to several interesting conclusions. He finds, for instance, that an investigation and comparison of the phenomena of growth in the several components of the body are far more instructive than mere weighing of the entire body. It is customary to reckon three principal stages or epochs of human life—namely, (1) the period of growth extending from birth to 25 years of age; (2) the period of maturity extending from 25 to 40 or 50 years of age, during which growth ceases and a condition of equilibrium is maintained; and (3) the period of old age which immediately follows that of maturity. The leading features of an individual life may be summarised in this way, but the study of the growth of separate organs or parts of the body casts quite a fresh light on the subject, revealing the fact that each organ has its own stages of youth, maturity, and old age, and that in none of the organs does this series of changes take place coincidently in point of time with the corresponding changes which affect the body as a whole. The body attains its greatest size during the third decade and continues about the same during the fourth and fifth decades. The brain, however, attains its greatest size in the second decade, the kidneys in the third, the muscles, skeleton, intestines, and liver in the fifth, and the heart and lungs in the eighth decade—i.e., in extreme old age. Increase or decrease in the weight of the body is therefore not due to simultaneous increase or decrease in the weight of all its component parts, but is the resultant of an increase in some organs and a decrease in others. The brain attains its greatest weight about the fifteenth year of life, and as the ratio of its weight to that of the whole body is at the highest in the new-born infant its growth relatively to that of the body evidently diminishes from birth onwards. The liver and kidneys present analogous conditions but in a much less marked degree. The loss of weight which is one of the features of old age is chiefly due to wasting of the bones and muscles. In the last two chapters of his work Dr. Mühlmann treats of metabolism at different periods of life and discusses the pathological changes of old age, comparing them with the effects produced by chronic starvation in middle life.

Studien über die Ursachen der Lungenkrankheiten. (Considerations relative to the Causes of Diseases of the Lungs.) By Dr. N. PH. TENDELOO. Part I. (Physiological). Wiesbaden: J. F. Bergmann. Glasgow: F. Bauermeister. 1901. Pp. 118. Price 3 marks 60 pfennig.—As is well known, some diseases of the lungs have a marked tendency to localise themselves in certain portions of these organs. Starting from this fact Dr. Tendeloo of Rotterdam, formerly assistant in the Boerhaave Laboratory at Leyden, set himself to study the question whether the changes in volume produced in the pulmonary vesicles during the act of respiration were the same in all parts of the lung. Both physiological and pathological methods are obviously calculated to throw light on the subject, and in the present treatise Dr. Tendeloo deals with the physiological part, reserving his pathological inquiries for a second work to be published at an early date. The conclusions which he has so far arrived at are as follows:—1. The changes in volume produced in the pulmonary vesicles during the act of respiration are not the same in different parts of the lungs. They are least in the paravertebral supra-thoracic portions and from this point they increase in all directions at varying rates, attaining their maximum in the caudal lateral portions. In every part of the lung and in each lobe of it the changes in volume produced in the pulmonary vesicles during the act of respiration are greater in the periphery than in the centre. 2. The renewal of the air is proportional to the magnitude of the changes in volume produced during the act of respiration. 3. The average kinetic energy of the air in motion is during one and the same phase of respiration directly proportional in the different parts of the lungs to the respiratory changes in volume. 4. The average amount of blood and probably also the average amount of lymph present is least in the supra-thoracic portions of the lungs but increases gradually in the caudal direction. 5. The kinetic energy of the lymph current during expiration is, on the whole, proportional to the respiratory changes of volume.

Hong-Kong: Report of the Principal Civil Medical Officer for 1899. By J. M. ATKINSON, M.B. Lond., D.P.H. Cantab. Pp. 38.—In his report for 1899 Dr. Atkinson states that the estimated population of the colony at that time was 259,310. There were 1132 births and 6181 deaths, 1434 of the latter being from plague. The birth-rate was 4·3 per 1000. The general death-rate was 23·8 per 1000; excluding the deaths from plague it would have been 18·3 per 1000. The death-rates according to nationalities were as follows: whites, 12·5 per 1000; Indians and coloured persons, 28·3 per 1000; and Chinese, 24·4 per 1000. At the Government Civil Hospital 2734 patients were admitted, of whom 811 were "Europeans," 659 were "Indians and coloured persons," and 1264 were "Asiatics (Japanese included)." Among the appendices there is a report by Dr. J. A. Lowson showing that at the Tung Wah Hospital 2542 patients were admitted; of this number 1491 were treated by the Chinese native doctors, 556 were under western treatment, and 495 (chiefly plague patients) were transferred to other hospitals. At the Infectious Hospitals, Kennedy Town, 37 cases of small-pox and 226 of plague were admitted. The average strength of the troops serving in Hong-Kong during 1899 was 1643 white and 1325 black; the average daily rate of sickness was 186·4 among the whites and 64·9 among the blacks. The mortality per 1000 of the strength was 11·5 among the whites and 7·5 among the blacks. The highest mean monthly temperature was 83° F. in July; the highest monthly rainfall was 20 inches in August.

To the Passion Play and Back. By J. JOHNSTON, M.D.Edin. Bolton: Tillotson and Son, Limited. 1900.—In this little pamphlet of 40 pages Dr. Johnston gives an account of a holiday excursion made with a friend to Ober Ammergau to witness the Passion Play. He gives a simply written description of the almost solitary mystery play which exists at the present day and his words give a good idea of the remarkable effect which the realism, the devotion and the reverence of the performance produce. The Passion Play, as is well known, had its origin in a vow made by the villagers in thankfulness for deliverence from a destructive epidemic which ravaged the country over 200 years ago.

JOURNALS AND MAGAZINES.

Edinburgh Medical Journal.—The opening article in the January number is the first of Dr. G. W. Balfour's Morison Lectures on Insanity, delivered before the Royal College of Physicians of Edinburgh. Under the general title of "The Borderland" he has collected a variety of instances in which persons subject to mental abnormality or disorder have attained great distinction in philosophy and science, as military and religious leaders, and in literature, his representative examples being Socrates, van Helmont, Joan of Arc, Mohammed, Dean Swift, William Cowper, and Christopher Smart. Professor Chiene of Edinburgh University publishes an account of his experiences with the medical department of the army in the South African war; in concluding he expresses the hope that the medical history of this war will be fully described in the same form and with the same thoroughness as the great civil war in America has been dealt with by the Government of the United States. In a presidential address delivered before the Edinburgh Obstetrical Society Dr. R. Milne Murray directs attention to the increasing puerperal mortality in private practice as contrasted with the very low death-rate in lying-in hospitals. Mr. W. Arbuthnot Lane writes on the operative procedures in simple fractures which have been unscientifically treated.

Scottish Medical and Surgical Journal.—The first article of the January number is devoted to the Scottish National Red Cross Hospital at Kroonstad, Orange River Colony, the author being Mr. Henry E. Clark, senior surgeon to the Glasgow Royal Infirmary. The first contingent of the hospital left Glasgow on April 20th, 1900, and arrived at Kroonstad on May 25th. Another member of the staff of the same hospital, Dr. Robert Stirling, surgeon to the Royal Infirmary, Perth, writes on the war establishment of the R.A.M.C. He considers that "the augmentation of the R.A.M.C. through civilians and civil hospitals does not supply that homogeneity and elasticity essential to the needs of a great war." In his opinion the best plan would be to form a large reserve of officers and men annually mobilised in military hospitals and paid during such periods of training. Dr. J. M. Cowan, physician to the Scottish Branch Red Cross Hospital, contributes a short article on the outbreak of enteric fever at Bloemfontein and the results of inoculation with Professor Wright's prophylactic.

Caledonian Medical Journal.—In the January number Dr. Alastair MacGregor of Shepley, Huddersfield, continues his articles on second sight, relating a variety of fulfilled premonitions of death; among the persons who experienced these premonitions were Dr. MacGregor's mother and brother, the present Lord Charles Beresford, and three Yorkshire clergymen. A considerable number of Gaelic anatomical terms are introduced in the course of a review of Mr. Alexander Carmichael's "Carmina Gadelica." Some space is devoted to announcements relative to the Gunning Celtic prizes of the Caledonian Medical Society which have been already mentioned in THE LANCET of Dec. 8th (p. 1658) and Dec. 22nd (p. 1825), 1900. The essays for which these prizes will be given must be sent to the secretary, Dr. S. R. Macphail of Rowditch, Derby, by Jan. 1st, 1902.

Mercy and Truth.—The January number contains articles on a medical mission in the north-west frontier of India by Dr. W. B. Heywood, and on medical work in Mombasa by Mr. C. S. Edwards.

THE LANCET.

LONDON: SATURDAY, JANUARY 19, 1901.

The Royal Commission on the Beer-poisoning Epidemic.

THE recent epidemics of peripheral neuritis, the discovery of arsenic in beer, and the possibility of arsenic being contained in any other food-stuffs, are among the points which have been referred for elucidation to a Royal Commission the constitution of which we print elsewhere. The terms of reference of the Commission are so wide that it is practically certain that this decision of the Government will lead to no prompt legislation, however urgently there may be need of it. Great public questions have, of course, in the past become clearer under the macroscopic and microscopic examination of a Royal Commission. And where such questions have involved an enormous mass of evidence being taken before any clear position could be defined or any definite line of action could be mapped out, delay in rendering a report and hesitation on the part of the Government in taking consequent action are inevitable. The case of the beer-poisoning epidemic, it seems to us, is very different, since there is plenty of evidence at hand, and this evidence is of a very unmistakeable kind, freely supplied by scientific men and business men anxious to tell the truth. Unless the scope of inquiry at present outlined for the Commission is not materially reduced, enabling it to do its work in less than a month, we think it a pity that it was appointed, for there is, in our opinion, an abundance of facts and material at hand which would have enabled the matter to be adequately and fairly discussed in Parliament without awaiting more information. Practically every instruction on the agenda presented to the Commissioners has been to some extent satisfied by the evidence of competent scientific men, for the economical aspect of the use of substitutes is not referred to the Commission. We are glad that the subject is to be approached in the first instance from the health point of view in order that an ugly stigma on our health administration may be removed once and for all and that the purity of our food-supply may be placed beyond reproach.

A Royal Commission is usually a long while in issuing a report because of the great crowd of witnesses that are enlisted to give evidence before it. Rapid action for the public and the sake of all concerned in the various calamities is what is required in the matter under consideration. If a Royal Commission must needs be held to make investigations respecting the beer-poisoning epidemic it is earnestly to be hoped that it will limit its interrogations to those important witnesses who have at their disposal the facts. The first instruction on the agenda before the Commissioners is "to ascertain with respect to England and Wales the amount of recent exceptional sickness and death attributable to poisoning by arsenic." The reports contained in our columns and in those of our contemporaries, medical and lay, show that fresh cases are occurring nearly every day, and therefore it will not be possible to gauge the true extent of the epidemic for some time. A good idea, however, of its area and of its distribution and of the number of individuals whom it has affected has already been given in the reports of the medical officers of health of the districts concerned, and again the number of cases admitted at hospitals are recorded and the deaths attributable to poisoning by arsenic in beer are of course registered. The second instruction on the agenda relates to "whether such exceptional sickness and death have been due to arsenic in beer or in other articles of food or drink, and if so (*a*) to what extent; (*b*) by what ingredients or in what manner the arsenic was conveyed; and (*c*) in what way any such ingredients became arsenicated." If we omit the words "other articles of food or drink" we shall be perfectly right in saying that the evidence already gained upon the point as to whether such exceptional sickness and death have been due to arsenic in beer is conclusive. The suggestion that the investigation should include other articles of food or drink besides beer opens up an enormous field for inquiry which will delay more than anything else the extinction of the mischief and the prevention of its recurrence. We honestly believe that unless the scope of inquiry, for the present at any rate, be confined to the beer-poisoning epidemic the appointment of a Royal Commission will be valueless so far as regards a speedy relief of the present unsatisfactory condition of affairs. In taking this view we find that we are in complete accord with the attitude of Mr. CHAPLIN, whose word on the subject of Commissions, whether Royal or Departmental, is well worth attention, for it is well known that he can claim an enormous experience. Referring to the second instruction to the Commission he writes to the *Times* "that he does not hesitate to say that with a reference so wide that it extends to all other articles of food and drink in England which are numbered by the hundred a Commission may easily sit for any time from five to seven or more years." Further, as Mr. CHAPLIN points out, the question of food and drink has only recently been legislated upon afresh after a very long inquiry by a Treasury Committee. He alludes obviously to the Food and Drugs Act of 1899 which provides against the presence of deleterious substances in foods, drugs, and drink.

We feel that the Government have already an ample supply of facts at hand in order to give the question fair discussion with the view to the introduction of a short Bill to prevent arsenic poisoning by means of beer. We care not whether such a Bill is directed to the interdiction of malt substitutes or whether it forbids the sale of all food and drinks except under their proper name, so long as it meets with an urgent requirement of public health. We do not suppose for a moment that Parliament will ever decide that only a certain fluid of a certain composition may be legally called beer, or will commit itself to any narrowly protective measure, but without doing either of these things the introduction of arsenic into beer can be stopped. The last instruction to the Commission provides that "if it is found that exceptional sickness and death have been due to arsenic

in beer or in any articles of food or drink to ascertain by what safeguards the introduction of arsenic therein can be prevented." There need be no "if"; exceptional sickness and death have been traced indubitably to arsenic in beer. Why, then, await the report of a Royal Commission to interdict by law the recurrence of such tragedies? We doubt the expediency, or even necessity, of this Royal Commission. It is an excellently composed body, but we cannot help feeling that it is being asked to answer questions that no longer need be put, and to suggest remedies which could be applied without its intervention.

The Modern Treatment of Stone in the Bladder.

BEFORE the time of CHESELDEN many and various methods of lithotomy were practised. Most of these were forms of perineal lithotomy, though they were crude and unscientific, but on a few occasions the suprapubic operation was practised. The introduction by CHESELDEN of the lateral operation of lithotomy early in the seventeenth century led almost at once to the discarding of all the various other methods which had previously been employed for the removal of stone from the bladder, and its pre-eminence was not seriously attacked for nearly 200 years. In 1822 CIVIALE placed on a firm foundation the operation of lithotrity and the value of the crushing operation was rapidly recognised and its employment spread widely. Yet there was no real tendency for lithotrity in the form then employed to displace the lateral operation of lithotomy, and it may be said that lithotomy remained the chief operation for vesical calculus for 50 years after the introduction of lithotrity, the crushing operation being performed in those cases only which were considered to be especially suited for it. And no material change was made in surgical procedure under lithotrity until the year 1878. The operation was still performed in several "sittings," and the crushed fragments were still removed mainly by the natural urinary flow. BIGELOW, in 1878, published his method of crushing the stone; he employed lithotrites still more powerful than those previously used, crushed all the fragments and removed them at the one operation. BIGELOW showed that this procedure was much more readily tolerated by the bladder than less thorough operations in which many of the fragments were left within the viscus which thus never had the complete rest which was necessary for its recovery. BIGELOW'S new operation was accepted after a little hesitation by all, or nearly all, surgeons throughout the world, and in a very few years the operation with which CIVIALE'S name was associated had died out; and so thoroughly had the later replaced the earlier operation that the name "lithotrity" was transferred to the new operation, and, in fact, at the present time when lithotrity is spoken of BIGELOW'S method is always intended. The name "litholapaxy" is occasionally used to designate the operation introduced by BIGELOW, but it is not unlikely ultimately to be given up for the somewhat shorter if no more euphonious "lithotrity."

About 1880 an attempt was made to re-introduce the "high" or suprapubic form of lithotomy; this was supported chiefly by Professor PETERSON of Kiel and by Sir HENRY THOMPSON. The operation was, of course, not in any way new, as it had been performed at intervals from the middle of the sixteenth century, and in 1875 Dr. C. W. DALLAS collected 465 cases of the operation which had been recorded in medical literature. The mortality from suprapubic lithotomy has varied greatly, but in skilled hands the results in suitable cases are comparable with those of any other method. At present it can only be considered advisable in certain cases in which lithotrity cannot be performed. Though BIGELOW'S operation had replaced all other methods for removal of a vesical calculus in adults, boys were until recently still submitted to the cutting operation, as it was thought that in them the calibre of the urethra was insufficient for the introduction of suitable lithotrites. But in 1884 Dr. D. F. KEEGAN, then a surgeon-major in the Indian Medical Service, published his results on lithotrity in boys, and these showed that the operation was as applicable to boys as to adults and that the mortality after lithotrity was distinctly less than after lithotomy. This teaching has been accepted and lithotrity in boys may be considered to be fully established, though naturally even more than ordinary care has to be employed in the operation. Thus it has come to pass that in all cases of stone in the bladder the crushing operation presents itself as the most suitable means of removal and that a lithotomy should only be performed where some insurmountable obstacle exists to the effective use of the lithotrite.

Much of the work which has lead to these conclusions has been done in India, where there is an unrivalled field for the treatment of stone in the bladder. The frequency of vesical calculus in some parts of that country is very great, and it does not appear strange, when the large population and the comparative scarcity of surgeons are considered, that it sometimes falls to the lot of a surgeon in India to operate in several hundred cases of stone. In an interesting discussion on this subject which was held at the last meeting of the British Medical Association it was maintained by some of the speakers that the stones in India were not of such firm consistence as those met with in East Anglia, and therefore that conclusions based on Indian experience were not applicable to calculi met with in this country. The opposite opinion was strenuously maintained by others at that meeting, and it may well be that though there is some difference in the hardness of these calculi the difference is but slight. A striking indication of the extent to which treatment of stone is required in India is afforded by the appearance recently of a special number of the *Indian Medical Gazette* devoted to the consideration of vesical calculus and its proper therapeutics. In this are printed articles by Dr. KEEGAN and others who have had much experience in this branch of practice and many notes are also given on special points in connexion with lithotrity. No surgeon can doubt after reading our contemporary's special number that at the present time the safest and the most speedy method of removing a stone from the bladder in nearly every case is BIGELOW'S operation of lithotrity.

The Battle of the Clubs at Wigan and Elsewhere.

MUCH has been said lately about the disposition of the friendly societies to act with consideration towards the members of the medical profession, but with every inclination to publish accounts of such a happy state of affairs we have been unable to come across a well-authenticated case. Yet any ungracious attitude on the part of such societies towards the medical profession is ungenerous as well as unjust. Whatever faults may be alleged against the original club system are due to the system itself, which was essentially an inadequate one, the product of old conditions, when the means and position of the working classes were very different from what they are now, and when medical education and equipment were also different. But even under that system, when the working man was poor, when there was little organisation of his order, when he counted for nothing in society and had no political power in the State, the medical man was his most constant friend. And through all the political changes of the last two or three generations it has been the same, the medical man has been on the side of all that made for the amelioration of the position of the poor. Now the working man is well paid; his class is highly organised; he meets his employers on almost equal terms; the labour and the skilled workmanship he has to give are as indispensable to national prosperity as is capital itself. He himself is in a degree educated; his children are more so, and the development of our complicated civilisation has created good places for them, for which they can be fitted by an education for which their parents pay only partially and indirectly. The working man of to-day is of political consequence. And withal he is a good fellow, and in his way, as Lord ROBERTS said of his soldiers, a gentleman. He has achieved his position largely by the genius for organisation which characterises his class. Is it conceivable that he should be offended with medical men for organising too, or for thinking that the petty remuneration with which club practice was rewarded in past days is quite out of place now? We cannot believe that this is the real feeling of the working man, or that if the facts were clearly placed before him it would continue to be so.

Yet what are we to think when we read some accounts of the action of large numbers of working men, acting not in their individual capacity, but as medical aid associations? THE LANCET of last week contains a report of the manner in which certain of the Durham and Northumberland miners, men of integrity who are prosperous, have received the demand of the medical profession for an advance of pay from 6*d*. a fortnight to 9*d*. A large proportion of the miners have refused to grant the advance asked for. An equally instructive story comes from the district of Glasgow, where all workmen are well paid. Dr. J. A. WILSON of Springburn has for 15 years served the Rechabites for 2*s*. 6*d*. a year per member, many similar societies giving 4*s*. or 5*s*. Dr. WILSON appealed for an increase to 4*s*., and asked also that children should be examined before admission to the benefits of the "tent," as the local organisation is termed, and that the pay for attending them should be raised also. The Rechabites, in reply, consented to increase the pay of adult members to only 3*s*. per annum but refused to raise the pay for children to this amount, though they agreed that they should be examined before admission to the "tent." The medical profession generally supported Dr. WILSON, but one medical man—there always seems one in such cases—consented to do the work on the shabby terms of the Rechabites. This week another story of the relations between the friendly societies and the medical profession reaches us through the press, and again we fail to see in it any sign of urbanity on the part of the societies. At Wigan, according to a report in a local paper there has been rejoicing over the formation of the Wigan and District Friendly Societies' Medical Association. This association has been formed in response to the action of the Medical Guild of Wigan which demanded better terms. The members of the new association are said to number nearly 5000. They have taken premises and opened a medical hall with great show of triumph and a resolution to have "a medical officer of their own." Druids and Oddfellows and Foresters dined and rejoiced together and thereafter held a meeting at which they tried hard to justify themselves for scouting the medical profession of Wigan. They appear to have acted under the guidance of Mr. BIBBY, described as "secretary to the Warrington Society." He seems to have been the orator of the evening, and he allowed himself the use of language towards the medical profession of Wigan and of arguments which contrasted with the tone of his audience and the statements of such as spoke. Amongst other things which Mr. BIBBY said was that in the majority of cases the cause which led to the formation of these medical aid associations was "the old club system, or in other words a slightly better form of treatment than paupers usually received." In refutation of this libel we have only to quote the words of the secretary of the Wigan Friendly Societies Medical Association—Mr. CAVEY—who in describing the battle between his association and the medical profession said that they were acting "in no spirit of animosity. They looked upon the services of the doctors in the past as honourable and they had no complaint to make in that respect." Mr. BIBBY added that the Wigan Association (the Medical Guild was obviously meant) had been "simply kicked out. It served them right. They ought to have been kicked out years ago for being so blind to their own interests." In the light of Mr. CAVEY'S words Mr. BIBBY is seen to be a highly inaccurate person, but we will try to believe in spite of his unmannerliness that he more accurately represented the motives of those who form friendly associations when he said that "they did not desire to do anything against the interests of the local doctors, they tried to conform strictly to the recognised rules of medical etiquette, that they did not advertise, they did not canvass, they desired the goodwill of every medical gentleman, and whether they got it or not they would do everything in their power to deserve it." Unfortunately, these are only words; what the medical profession would like to see is some action on the part of the friendly

societies that did not seem directly antagonistic to the profession.

As we understand the situation in Wigan one medical man has been found to do the work of many by attending single-handed on 5000 people. And this event is applauded as a victory over the medical profession by a meeting at which important speakers say that the Wigan friendly societies do not "desire to do anything against the interests of the local doctors" but "desire the goodwill of every medical gentleman." The action of the Wigan friendly societies is not only contrary to their secretary's statement and to the opinions expressed by the leaders of friendly societies in their repeated interviews with the Committee of the General Medical Council, but it has led or is leading up to a piece of sweatin which working men and their unions would be the first to condemn in their own employers. The working men of Wigan, acting as employers, propose to exact an amount of work from one man that should employ three or four, and they will defend their action as sweaters always do by saying that the man they have hired gets what he contracted for. No one man can give proper medical attendance to 5000 people. An authority which the Wigan friendly societies cannot repudiate, that of the Friendly Societies' Medical Alliance, laid down nearly 20 years ago, in 1883, when working men's wages were not so good and medical education was not so long and expensive as now the following order, that "when (medical aid) associations have upwards of 5000 members it will be found that either three medical men or two medical men with a dispenser will be required." It is not the medical profession of Wigan—save, perhaps, one of its members—that has to be ashamed or afraid of an arrangement which commits the health of 5000 persons to the care of one medical man.

Annotations.

"Ne quid nimis."

THE EDUCATION OF CRIPPLED AND FEEBLE-MINDED CHILDREN.

EVER since the publication of the report of the Royal Commission on Blind and Afflicted Persons in 1889 much interest has been shown by the public, and by the medical profession, as to the best methods of providing for the care and education of children who are unable to attend the ordinary schools. Special day classes for cripp'ed and feeble-minded pupils were first instituted by the London School Board; their example was followed by some provincial authorities and the Education Act (Epileptic and Defective Children), 1899, provided special money grants for the education of defective children properly certified. An impetus has thus been given to this useful department of education, which is extending in many directions guided by public effort and private philanthropy. Early last year the Liverpool School Board opened a special institution for the reception of day pupils who are crippled or mentally defective and placed it in the charge of a head mistress and three assistant teachers, with a nurse. At present there are on the register 67 cripples and 49 mentally weak children. Those who cannot walk are conveyed to school in an ambulance or by omnibus. Couches as well as chairs and desks suitable for the cripples are provided. There are also baths in the institution where a nurse is in attendance who can apply simple dressings and attend to the children. The teachers superintend the dinners which are provided in the school, and by their kindness, tact, and patience they have done much to train habits of obedience and quietude in the pupils in place of unrest and the desire to disobey orders, however kindly given, which is so common among such children when they are neglected. The children are kept employed as far as possible through the day, with intervals for rest and play, when they are encouraged to help one another; the child with heart disease can amuse his fellow with spinal curvature who may not move from his couch. Occupations are planned to be of increasing usefulness and interest according to the ability and advancement of the pupils, commencing with bead-threading, cane-weaving, knitting, and advancing to mat-making or needlework. The purpose of each form of occupation is educative and progressive. Music and singing by the tonic-sol-fa system are found useful and promote comradeship and harmony in the school. We are glad to find that much attention is given to the cultivation of speech and the correct sounding of words written on the blackboard, while some pupils are taught arithmetic, grammar, and geography. Common knowledge is not neglected, and the children have learnt something of the heroes of the present war and of its principal events. Genuine success has been achieved. We are told that "recently a man called at the school to express the gratitude of all the people in one thoroughfare on account of the improvement that had been wrought in the conduct of one lad whose parents lived in that street." Much useful work has been done during the eight months that the school has been open. We should like to learn more about the system adopted in training the feeble-minded children in observation and judgment and as to the physical exercises used. The institution is under the medical supervision of Mr. Damer Harrisson who has shown great interest in the welfare of the children and their progress.

THE CERTIFYING OF STILLBORN INFANTS.

A SINGULAR charge against two medical men, Mr. D. T. Jones and Mr. J. M. James, was investigated before the Recorder of Sheffield at the borough quarter sessions on Jan. 11th. The defendants were indicted, the one for wilfully giving a false certificate that a child had been stillborn which had been, in fact, born alive, and the other, his partner, for aiding and abetting him in the same offence. Witnesses were called for the defence, including one of the defendants, and in the result the defendant charged with aiding and abetting was acquitted by the direction of the Recorder, while a similar verdict was also eventually found in favour of the other, coupled with an expression of opinion by the jury that he had been guilty of gross carelessness. From the evidence given on both sides we gather that the child in question was born prematurely, but that as to whether it was born at seven or at six months there seems to have been conflicting testimony; that after its birth Mr. Jones, one of the defendants, arrived and expressed the opinion that it could not possibly live, and took no particular steps to prolong its existence beyond having it placed in a blanket before the fire, while it was not alleged by the prosecution that the life of the child lasted for more than 12 hours after its birth. There was evidence that some attempt was made to feed it with sugar and butter on the finger of a witness, but no steps were taken by anyone to see whether the mother could nurse it. There was also evidence that it uttered sounds, but Mr. Jones declared that it did not do so when he was present,

saying that it made a spasmodic attempt to breathe and that that was the only sign of vitality that it showed while he was present. Leaving out a question raised as to his giving a certificate of its having been born alive and then withdrawing it, the terms of which certificate seem to have been disputed by him, we need only add that he finally certified that it was stillborn, although he is credited with the admission in the report before us that "he did not think it possible that the child had lived 12 hours," as the prosecution asserted, an admission which seems to us on the face of it inconsistent with a certificate that the child was born dead. His defence, however, seems to have been that the child was practically stillborn and that so he was justified in giving the certificate. Mr. T. R. Jessop of Leeds and Dr. Henry J. Campbell, lecturer on medical jurisprudence at the Yorkshire College, Leeds, who were called on behalf of the defendants, supported this view and apparently were of the opinion not only that a child such as they had heard described could not possibly survive—a matter which we have not discussed and which was not seriously questioned at the trial—but that a child in such a state was "practically dead" and that for it to be practically dead justified a certificate that it was stillborn. To determine the precise moment at which life ceases is not always easy, or, indeed, possible, but this is a different thing from contending that a person showing but slight signs of life, which signs admittedly must soon cease, is "practically dead," dead so truly as to justify a certificate that he is dead. Such a point could hardly be argued in the case of a grown person; but can it any more be raised in that of a newly-born infant? Important issues might hang upon the hour named by the medical man testifying to a death. The devolution of property might depend on whether a certain person, whether infant or adult is immaterial, lived long enough to inherit or died an hour or two too soon. In the case of an infant a charge of manslaughter or murder often depends on whether it was stillborn or had separate existence from its mother. In such a case a medical man, who before any charge of a criminal sort was made, had certified a child to be stillborn only because it was "practically" so, might find himself in an awkward predicament. In the case tried at Sheffield there was apparently no evidence given of any motive for the course taken by the defendant who gave the certificate, except some suggestion of a saving of fees to the relatives, and no doubt this want of evidence of motive influenced the jury who censured him for making a mistake and gave him "the benefit of the doubt." It is, however, possible that in such a case the parents of a child might be deeply interested in concealment and in the avoidance of scandal, and that secrecy might to some extent be gained by the stillborn certificate which, though it does not remove the obligation to register, simplifies formalities with regard to burial. In any case, we cannot admit a state of "practical" absence of life justifying a certificate of death or of stillbirth, unless conditions exist consistent with death and with death only, while we regard the accuracy of all certificates of birth and death to be of the utmost importance, whether great issues be involved or not.

SUBPERIOSTEAL FRACTURES.

IN the *Boston Medical and Surgical Journal* of Nov. 29th, 1900, Dr. Frederick J. Cotton calls attention to this comparatively unrecognised condition. Green-stick fractures are, of course, subperiosteal, but the type considered by Dr. Cotton differs from the ordinary green-stick fracture in that there is not a partly-broken bone and a deformity, but a clean-cut crack or transverse fracture and no deformity. Crepitus is absent. Subperiosteal fractures are, according to the writer, common in children but before the introduction of skiagraphy into surgery they escaped notice. The following cases are related. Case 1. A boy, aged 13 years, had his right arm injured in a football scrimmage. Next day he complained of slight pain and weakness in the hand and arm. There was no swelling or ecchymosis. At the middle of the radius there was localised tenderness, but the application of considerable force gave rise to no suspicion of deformity or mobility. The arm was put up in splints and examined at intervals. Not until 10 days after the injury was anything felt. Then a small callus was felt at the point of injury and a skiagram showed a transverse fracture apparently involving the full thickness of the bone. Three weeks after the injury repair seemed to be complete and the arm could be used freely. In Case 2 a fracture ran obliquely across the radius just above the epiphyseal line. A skiagram showed a clean fracture with practically no displacement—a condition corresponding to the not infrequent Colles's fracture without displacement occurring in adults. Case 3. A boy, aged seven years, fell on his elbow. Under ether a fracture running obliquely upwards and outwards was made out. There was no deformity and but little mobility. Case 4. A girl, aged five years, fell on her elbow. Next day there were effusion into the joint, pain, and tenderness. Careful examination showed no sign of fracture, but skiagraphy revealed a distinct crack across the humerus above the epiphyseal line. Case 5. A girl, aged five years, fractured her right clavicle. Disability and pain were slight. The only sign of fracture was the formation of callus. Dr. Cotton performed experiments on the cadavers of newly-born children to see how readily fractures could be produced and how much the periosteum hindered displacement. By slow forcible bending green-stick fractures with intact periosteum of the femur, tibia, and clavicle were produced. The latter could be bent double and back again with some breaking of the bone but no definite fracture line. A humerus was stood on end and struck on the upper end. It broke in the middle. There were some displacement and hinge-like movement, but the periosteum was untorn.

SHAKESPEARE AND MOLIÈRE AS PSYCHOLOGISTS.

M. COQUELIN'S attempted differentiation between Shakespeare and Molière in the current number of the *Grande Revue* contains many admirable points, but the versatile actor would be more than mortal if all were equally accurate. Molière's and Shakespeare's conceptions of life are wholly different, he says in conclusion. Shakespeare saw life as in a dream; he was an artist and nothing more. Molière saw things in their reality. Now, in a preceding passage M. Coquelin, after expatiating liberally on the merits of Shakespeare's women, felt constrained to note as a curious fact amongst them all, whether charming, profound, or sublime, that there is not to be found the equal of an Agnes or of an Armande. "In Shakespeare," exclaims the talented critic, "the chastest young girl has eaten of the tree of knowledge. The ignorance so dear to Arnolphe appears impossible to the English poet. Juliet is only 14, yet she is a woman. And even Miranda—brought up on a desert island with, for sole companions, her father and Caliban, and who in so many respects resembles Agnes—even Miranda has not the innocence of Agnes." To the questions Are such characters as Armande and Agnes true to life? and Is the portraiture of Molière more in accordance with reality than that of Shakespeare? the answers, if based upon the teachings of physiology as well as of psychology, must be in the negative. These young women, who were by no means idiots or fools, had entered upon the

stage of sexual maturity and were therefore aware by personal experience of the physical manifestations which that state entails on their sex. The state which M. Coquelin so strenuously lauds as *innocence* is in reality merely *ignorance*, and instead of deserving laudation calls for pity. Chastity founded and depending on ignorance is not a quality to excite admiration. It is a condition obviously fraught with peril and demanding removal at the proper time by means of judicious instruction. There is nothing to be ashamed of in knowledge, nor does the possession in the smallest degree detract from the exquisite loveliness of purity. On the contrary, it enhances it exceedingly in the eyes of all who are endowed with a true sense of proportion. The poet tells us that

> "Even the lion will turn and flee
> From a maid in the pride of her purity,"

but assuredly he never meant his couplet as an encomium on want of knowledge. The false modesty which desires to enwrap ignorance with the glamour of pseudo-sanctity is dying hard, but happily dying.

ANGINA DUE TO FRIEDLÄNDER'S BACILLUS.

IN the *New York Medical Journal* of Dec. 22nd, 1900, Dr. Emil Mayer has described a form of membranous sore-throat due to the bacillus of Friedländer, an organism found in certain cases of croupous pneumonia and also in other inflammations—stomatitis, rhinitis, membranous bronchitis, dacryocystitis, and ulcer of the cornea. In throat affections this bacillus was first observed by Max Stoss.[1] A woman, aged 30 years, had a sore-throat for eight days with insignificant general symptoms. On the right tonsil there was a white roundish exudation which yielded the bacillus of Friedländer in pure culture. The next cases, five in number, were investigated bacteriologically by M. Nicolle and his pupil M. Hebert,[2] and they form the basis of the latter's Thèse de Paris (1896). These two observers found the bacillus eight times in 1600 cases of sore-throat. W. C. C. Pakes[3] stated that since November, 1894, tubes of serum inoculated from 500 cases of sore-throat among the in- and out-patients of Guy's Hospital yielded the bacillus of Friedländer five times. Twice it was found in pure culture, twice in association with the bacillus diphtheriæ, and once with the staphylococcus aureus. Two more cases have been recorded by Billet.[4] The preceding are all the cases on record which Dr. Mayer could find. The following case came under his observation. A girl, aged 19 years, in good health, had suffered for 18 months from a chronic membranous inflammation of the throat. When untreated the membrane recurred two or three times a week, lasting one or two days and then becoming completely exfoliated, leaving the throat apparently healthy. If removed forcibly a raw surface covered by a glairy material was left. The surface bled on manipulation. The area affected varied; sometimes the entire pharynx and soft palate were covered. The formation of the membrane was accompanied by a sense of tightness in the throat. The membrane at first was very thin and adherent. Scattered through it were numerous small blebs. In a few hours the membrane became thick and pearly white. The suffering then was great. The patient learned to relieve herself by making gashes in the membrane with the point of a pair of scissors. Exfoliation took place without pain, leaving a reddened surface. Examination of cover-slip preparations and cultures never revealed the diphtheria bacillus but always Friedländer's bacillus almost in pure culture. Analysis of all the recorded cases shows the following facts. Angina due to Friedländer's bacillus may be acute or chronic. In the acute form there is on the tonsils and pillars of the fauces whitish-brown or pearly, somewhat adherent, membrane. The subjacent tissue is slightly inflamed. In the chronic form the tonsils, pillars of the fauces, palate, and posterior surface of the pharynx are strewn with white, pearly, or yellow elevations varying from one to five millimetres in diameter. They adhere closely to the mucosa which appears bloody or slightly inflamed. To remove them forceps or curette must be used. They are quickly reproduced, but, unlike diphtheritic spots, they show no tendency to coalesce. Symptoms may be absent or consist only of dryness of the throat, cough, and frequent attempts to swallow. The cervical glands are not swollen. In the acute form there may be some fever, lassitude, and headache. The duration varies from two or three weeks to several months. Dr. Mayer's case differs from those previously recorded in some respects. In but one of the latter was there a continuous membrane; in his case the entire soft palate was covered and the posterior wall of the pharynx had an independent membrane. As to treatment, the acute form tends to spontaneous cure. In the writer's chronic case no treatment seemed to avail at first, but later the application of an alcoholic solution of orthoform rendered the patient comfortable and diminished the severity and frequency of membrane formation.

[1] Mittheilungen aus der Schweiz, 1895.
[2] Annals of the Pasteur Institute, vol. xi., 1897.
[3] Brit. Med. Jour., March 20th, 1897.
[4] Presse Médicale, March 8th, 1899.

DEATH UNDER CHLOROFORM.

AN inquest was held at Bristol on Jan. 7th to inquire into the circumstances attending the death of Florence Brain, aged three years, who died while undergoing an operation at the Bristol Royal Infirmary. It seems that the patient was admitted to the Bristol Royal Infirmary on Jan. 3rd, 1901, suffering from tuberculous peritonitis. On account of her varying condition operation was deferred several times until, on Jan. 5th, after a general consultation by the surgeons, it was decided to open the abdomen. The child had been vomiting for 14 hours and at the time of operation the temperature was 95° F. and the pulse-rate was 100, very small and weak. The heart was examined and found to be normal, and chloroform was given upon a piece of flannel stretched over a wire frame. The child took the anæsthetic fairly well and the operation was nearly completed, but while the stitches were being put in she began to come round, so a little more chloroform was given. After a breath or two respiration suddenly stopped. No more chloroform was given, the operation was stopped, and artificial respiration was performed for half a minute. Natural respiration re-commenced and a few more stitches were being put in when the breathing began to fail and was therefore supplemented by artificial respiration. The pulse up to the cessation of respiration had remained good. Artificial respiration was continued for some time; inversion of the body, application of hot fomentations over the heart, and administration of strychnine were all used but without effect. The colour of the patient remained throughout extremely good, no lividity of either lips or cheeks being noticed. The amount of chloroform used in all was about two drachms. A post-mortem examination showed very extensive tuberculous deposit throughout the abdomen, the intestines being matted together. There was, in addition, extensive tuberculous disease of the lungs and the mediastinal glands were caseous. The heart and brain were normal. Mr. H. F. Mole, house surgeon, said in evidence before the coroner that the child died partly from syncope and partly from severe tuberculous disease, and the jury returned a verdict in accordance with the medical evidence. The phenomena of the narcosis as described appear to have been of a normal kind until the point when upon returning consciousness a fresh administration of the anæsthetic was

attempted. We are, however, told that the child took the anæsthetic "fairly well," and possibly this implies that there was some difficulty earlier. It is matter of common experience that the resumption of consciousness in weakly children is marked by either faintness or a hurried and often crying respiration; in either case a fresh supply of chloroform will easily prove an overdose and paralyse the vasomotor system or respiration. In the present case the circulation does not appear to have flagged so that the child in its feeble condition probably inhaled too strong a vapour of chloroform when the mask was re-applied. We presume that no third attempt to give the chloroform was made—i.e., no more was inhaled after the first failure of respiration. Certain it seems that the exhausted state of the child was a potent factor in the fatality. We notice that no inhalation of ether was given as a restorative measure; it is certainly a matter of regret that so few anæsthetists employ ether by "the open method"—i.e., by dropping it on lint—in such cases as the one under comment. It is one which often answers extremely well and saves many accidents.

UNGUENTUM HYDRARGYRI B.P.

IT is well known that mercurial ointment is commonly sold at roughly a third of the strength of the formula laid down in the British Pharmacopœia. But of course when the B.P. preparation is asked for it should be supplied. That apparently was not the demand made recently by the person appointed to collect samples under the Food and Drugs Act at the instance of the Folkestone Town Council. He was supplied with the mild ointment which it is the custom of druggists to sell to ordinary purchasers. And so a deficiency of mercury was found in accordance with the standard adopted by the British Pharmacopœia. The town clerk was instructed to take the necessary legal proceedings, which, however, were ultimately withdrawn, the chairman of the sanitary committee expressing an opinion that where a thing was not sold in accordance with the standard of the British Pharmacopœia it ought to be so labeled; and there is a good deal to be said in favour of this view. Pharmacists, however, will hardly relish labeling their preparations as non-official, as though that description would be perfectly accurate in some cases, yet it is calculated to bring preparations so labeled under prejudice. The Bench granted two guineas as a sort of solatium to the defendant, whilst expressing no opinion on the aspects of the case.

THE MINISTRY AND THE LICENSING LAWS.

DURING the short session of Parliament held in December about 50 Unionist members met in Committee Room No. 17 and unanimously agreed on a memorial to the Prime Minister in favour of licensing reform being undertaken next session by the Government in accordance with the unanimous recommendations of the Royal Commission on the Licensing Laws. It was resolved to form a body to be called the Unionist Licensing Reform Committee, with Sir W. H. Houldsworth as chairman and Mr. E. Tritton as honorary secretary. The Primate has lately intimated that the bishops are unanimously in favour of legislation on certain lines, and are determined that in some form it shall be attempted. There can be no doubt that the leaders of the Nonconformist churches are equally anxious to see some legislation recognising and tending to reduce the enormous excess of drinking—the excess which the majority report of the Royal Commission in a euphemism calls "the superfluous drinking" of the country. There is a rumour that the Government contemplate the introduction of a measure on the subject. We sincerely trust that this rumour will prove to be well founded. If it is not so we venture to believe that they will offend some of their best supporters and many who, like ourselves, without party bias, are anxious about the health and social happiness of the people. We are on the eve of a series of Cabinet meetings. The war and foreign politics cannot entirely engross the whole attention of Parliament. Of all social questions that of the housing of the poor is the most urgent, as Lord Salisbury has recently told us. Social reformers maintain that good houses cannot be obtained for the poor without the help and coöperation of the poor themselves. Articles in our columns have recently shown that in many cases the dissolute habits of the poor immensely complicate the problem of housing them. But without some support from the State the poor will not resist the fascinations of the public-house which absorbs such a large and disproportionate share of their wages. We venture to hope that the Ministry will tackle this question and not leave its supporters speechless when taunted as a party with indifference on this subject. Almost every European nation is feeling that legislation must do more than it has done to arrest the degeneration, disease, and poverty traceable to "superfluous drinking." Our national pauperism undergoes no reduction corresponding to the improved means of the people, showing that the nation suffers from the diversion of capital spent over this vice.

ARSENICAL POISONING IN THE COUNTY OF SALOP.

WE have already pointed out that if the provisions of the Food and Drugs Act were carefully and systematically made use of the sale of beer contaminated with arsenic would soon be stopped. Pending, however, the conclusions of a Royal Commission we may hope that full advantage of existing legislative machinery will be taken. Amongst the first successful prosecutions have been those instituted in the county of Salop. At Newport in this county on Jan. 15th a prosecution supported by the county analyst and the county medical officer of health resulted in conviction and a fine of £5. The beer contained one-eighth of a grain of arsenious acid per gallon. It is desirable to point out that in future all analysts should report the exact amount of arsenic found to be present and not be content with simply saying that the poison was discovered. The borough authorities of Shrewsbury have also fined a man for a similar offence and other prosecutions are pending. It would appear that between 50 and 60 arsenical poisoning cases have occurred in the county, including 30 at least at Market Drayton, 15 at Whitchurch, two at Wellington, and one each at Oakengates, St. George's, and Shrewsbury. According to observations so far made the pigmentation and eruptions in these cases are not so marked as they were in the cases in the Manchester epidemic.

THE PREPARATION OF BLOOD FILMS.

THE examination of the blood as an aid to diagnosis is now practised much more frequently than formerly, and especially in cases of supposed malarial fever. One of the main difficulties is to obtain a satisfactory film. Many suggestions have been made and in the *Journal of Tropical Medicine* of Dec. 15th Mr. W. L. Braddon, F.R.C.S. Eng., Negri Sembilan, Malay Peninsula, publishes a method which he has found to give good results. The slides and coverslips are sterilised and thoroughly cleaned. If slides with coverslips attached are to be prepared, the slip is placed on the slide in such a position that one of its edges coincides exactly with that of the slide. For temporary use vaseline is smeared round the edges of the coverslip, except that which corresponds with the edge of the slide and a small portion of the opposite edge. For experimental purposes white cement should be employed instead of vaseline. For the preparation of paired coverslips two slips, preferably

square ones, are accurately superimposed and firmly pressed together, and the vaseline or cement is smeared over all the edges except one, which is left free as before, and a part of the opposite edge. On touching the drop of blood to be examined with the free edge of a slide or paired slip, the blood enters in a thin film in which the corpuscles are spread out with satisfactory uniformity, having suffered a minimum of change from exposure to air and none at all from handling or pressure. When the whole space has been slowly filled the edges and small openings previously untouched with vaseline or cement are closed by applying a little of the former with a small camel-hair brush. Mr. Braddon states that fresh blood so taken will keep longer than after any other process with which he is acquainted. He goes on to say that stains are best added by placing a drop on the surface from which the blood is drawn and puncturing through the drop. This process would seem to possess many advantages. The glasses and coverslips duly arranged, the specimens of blood can be obtained by persons unskilled in the technique required in other methods; and if it should be necessary to send the preparations some distance to be examined they can be packed for carriage with less fear of damage than if single coverslips are employed.

IDIOPATHIC INTERNAL HYDROCEPHALUS.

IN a recent contribution to the *Journal of Experimental Medicine* (Oct. 25th, 1900), by Dr. Charles W. Burr and Dr. D. J. McCarthy, attention is drawn to the fact that whereas internal hydrocephalus from mechanical causes is relatively common, idiopathic internal hydrocephalus is rare and has attracted the attention of clinical observers and pathologists only recently. The credit of having established idiopathic internal hydrocephalus as a distinct clinical and pathological entity belongs to Quincke who in 1896 described the two varieties, acute and chronic, of this affection. The acute variety is most frequent in children, in adults it usually follows cranial injury, acute or subacute alcoholic poisoning and infectious fevers, especially typhoid fever and pneumonia. The following case was that of a man, aged 33 years, who was admitted to the Philadelphia Hospital in April, 1899, with severe headache, great weakness, and abdominal pain. His family and personal histories were unimportant, except possibly that four years previously he had had typhoid fever. On the evening of his admission to hospital he was delirious, the head was retracted and the neck muscles were rigid, and the legs were strongly flexed upon the abdomen. The temperature was 102° F., the pulse was 82, and the respirations were 24 per minute. The head could not be flexed or moved laterally, all attempts at passive movement causing severe pain. There was no muscular rigidity elsewhere. The tongue was brown, the lips were cracked, and the abdomen was distended. The knee-jerks and plantar reflexes were absent. The urine contained a trace of albumin and a few hyaline casts and had a specific gravity of 1027. Widal's test was made repeatedly with the blood with negative results. The provisional diagnosis was acute meningitis. At the end of a week Kernig's sign was present. Herpes of the lips and nose and a bluish mottling of the skin now appeared. The mental state varied greatly, the patient being at one time restless, delirious, and incoherent, at another time stuporous, and at moments almost rational. The pupils were dilated and slight lateral nystagmus was present. The fundus oculi was normal on both sides. In a fortnight he improved a little, the pain disappeared, and he was mentally clear, "but he had no realisation of his being sick, and though too weak to stand maintained that he was very well. ..... He was trifling and jocose, and, as his sister said, altogether unlike his usual self." He now appeared like a man in the early stages of general paralysis of the insane. He improved physically and remained thus for a month when the temperature rose, the old symptoms returned, nystagmus became marked, subsultus tendinum was added, and he died. The necropsy was made the following day. On opening the skull the dura mater was tense and elastic. The cerebral convolutions were broadened and flattened so that the sulci were almost obliterated and appeared as lines beneath the pia. The cortex was pale and anæmic. The infundibulum was distended and on opening the ventricles a large amount of clear fluid escaped. The lateral ventricles and the aqueduct of Sylvius were distended and the ependyma was boggy and separated easily from the underlying tissue. The choroid plexuses were œdematous, swollen, and injected. The spinal cord was similarly affected. The heart and lungs were normal. Microscopical examination showed a large number of hyaloid bodies in the choroid plexuses and a marked ependymal proliferation in the lateral ventricles. The vessels beneath the ependyma were actively congested and were surrounded by round cells with nuclei slightly smaller than glia cells. The neuroglia cells also showed proliferative changes. The cortical and spinal nerve-cells stained by Nissl's and Weigert's methods showed nothing abnormal and the white matter of the cord showed no degeneration with Marchi's method. Auto-intoxication was believed to underlie this obscure affection in the present instance, as this would best explain the symptoms present.

"HOSPITAL MANNERS."

UNDER the above title a contemporary comments upon the discourtesy that is said to be met with from subordinate officials at hospitals. The criticism to which we are referring is based upon the alleged grievances of a would-be lady visitor. This lady's sense of the fitness of things was apparently first offended when she was asked to wait in a room adjoining the matron's room. When from the matron's room itself laughter was heard the would-be visitor's feelings were further outraged. Later she received, according to her account, a cool reception at the matron's hands, and her final "Good morning" met with no response. Now, all connected with hospitals know how much good and kindly work is done by lady visitors and would be deeply grieved to think that their efforts should ever receive any but the warmest welcome at the hands of the matron or any other hospital official. That there was any discourtesy on the part of the matron in the case referred to we are very loth to believe. The lady was admittedly a complete stranger to the hospital. Strangers in hospitals wander to the queerest places and have the queerest notions as to who and what are the persons and things they meet. To the average lady in a strange hospital every student is a physician or surgeon, and quite possibly any nurse, or even wardmaid, might be a matron. That a lady should have been impolitely spoken to by anyone is of course deplorable, but the discourtesy of which our contemporary complains is, we are perfectly certain, scarcely to be found in any London hospital.

ROYAL MEDICAL BENEVOLENT COLLEGE, EPSOM.

THE Earl of Rosebery, the President of the Royal Medical Benevolent College, has promised to take the chair at a festival dinner in aid of the fund for the pensioners and foundation scholars at the Hotel Cecil on Tuesday, April 16th. In consequence of heavy and unexpected charges which have arisen within the past few years for drainage and repairs money has had to be found, and the council are now in a state of serious financial embarrassment, although, as far as can be seen, the pressure is only of a temporary character. On Dec. 31st, 1900, a sum of £2500 was owing to the bankers. To liquidate this and to keep up the yearly aid to the aged pensioners and young foundation

scholars the aid of all interested in the welfare of the medical profession is earnestly solicited. Gentlemen willing to act as stewards or who desire to be present at the dinner will receive all information from the secretary, Mr. J. B. Lamb, at the office, 37, Soho-square, W.

LIEUTENANT INKSON, V.C., R.A.M.C.

FOR the second time within a year it is our proud duty to record the bestowal of the blue ribbon of service honours—the Victoria Cross—upon a member of the Royal Army Medical Corps. The last recipient was Major W. Babtie, C.M.G., V.C., R.A.M.C., and now the honour comes to Lieutenant E. T. Inkson, R.A.M.C., for the following act of courage. On Feb. 24th, 1900, Lieutenant Inkson carried Second Lieutenant Devenish (who was severely wounded and unable to walk) for three or four hundred yards under a very heavy fire to a place of safety. The ground over which Lieutenant Inkson had to move was much exposed, there being no cover available. In the name of the profession we congratulate Lieutenant Inkson upon the addition of his name to the national roll of heroes.

GARBAGE-MONGERS.

WE have on previous occasions expressed the opinion that a man who sells diseased meat for human consumption is no more nor less than a potential poisoner and should be treated as such. A peculiarly infamous case of the kind is reported from Aberdeen, where on Jan. 15th Mr. George Wood, a butcher and cattle-dealer, pleaded guilty to having sold to a firm of Government contractors a large quantity of unsound beef. The meat was going to be made into rations for the troops at the front. Wood was fined £50 and costs, with the alternative of 60 days' imprisonment. Why any alternative was offered we fail to see, for no more dastardly crime could be imagined than that of attempting to poison Her Majesty's troops on active service.

THE RÖNTGEN SOCIETY.

THE council of this society announce that the President, Dr. J. Macintyre of Glasgow, has placed at their disposal a gold medal to be awarded to the maker of the best practical x-ray tube for both photographic and screen work. The competition is open to makers in any country. The jury will be chosen by the President and council of the society, and their names will be announced in the *Times* of March 1st. Tubes intended for competition must be sent in addressed to the Röntgen Society, 20, Hanover-square, London, W., marked "Tube for Competition," the package containing the full name and address of the sender, and must reach the society not later than May 1st, 1901. The conditions of the competition can be obtained on application to Dr. F. Harrison Low, honorary secretary, 12, Sinclair-gardens, West Kensington, London, W.

THE ELECTION OF A DIRECT REPRESENTATIVE FOR IRELAND ON THE GENERAL MEDICAL COUNCIL.

ON Feb. 28th, 1901, the term for which Sir William Thomson was elected as Direct Representative of the registered practitioners in Ireland will expire. For some time past the General Medical Council has been taking steps in accordance with the Medical Acts preliminary to the issue of voting papers for the election. The issue of such papers will take place between Jan. 21st and 24th. The last day for their return will be Jan. 31st. The counting of votes will take place between Feb. 1st and Feb. 4th. The meeting of the Branch Council for Ireland to certify the result of the election will be on Feb. 5th, and the declaration of the poll by the returning officer will take place on Feb. 6th. The general impression is that Sir William Thomson will be re-elected, though we learnt with some surprise a few days ago that a contest is possible. It will be a pity to bring any second candidate into the field unless there is a good chance of his success. Some feeling has been expressed in favour of the nomination of a Poor-law medical officer by the council of the Irish Medical Association. But a man is wanted who will represent the whole profession in Ireland, including its Poor-law medical officers. And no man is more capable of doing this with dignity and effect than Sir William Thomson, who is deservedly regarded as one of the most useful, independent, and well-informed members of the Council.

THE REGULATION OF THE SALE OF CARBOLIC ACID.

A CIRCULAR letter has been sent to the sanitary authorities throughout the country admonishing them as to the precautions to be taken in dealing with carbolic acid. As we announced in THE LANCET of Sept 8th, 1900 (p. 752), an Order was made by the Privy Council in July, 1900, approving a resolution passed by the Pharmaceutical Society of Great Britain that liquid preparations of carbolic acid and its homologues containing more than 3 per cent. of those substances should, except in certain cases connected with agriculture and horticulture, be deemed poisons within the meaning of the Pharmacy Act, 1868. It is now pointed out by the Local Government Board that whenever the disinfectant employed is carbolic acid or any other poison within the meaning of the Pharmacy Act, 1868, only bottles similar to those prescribed by the regulations adopted by the Pharmaceutical Society of Great Britain and approved by the Privy Council on Jan. 31st, 1899, should be used to contain it. The regulations in regard to the keeping, dispensing, and selling of poisons are now as follows:—1. That in the keeping of poisons each bottle, vessel, box, or package containing a poison be labeled with the name of the article and also with some distinctive mark indicating that it contains poison. 2. Also that in the keeping of poisons each poison be kept on one or other of the following systems—viz., (*a*) in a bottle or vessel tied over, capped, locked, or otherwise secured in a manner different from that in which bottles or vessels containing ordinary articles are secured in the same warehouse, shop, or dispensary; or (*b*) in a bottle or vessel rendered distinguishable by touch from the bottles or vessels in which ordinary articles are kept in the same warehouse, shop, or dispensary; or (*c*) in a bottle, vessel, box, or package kept in a room or cupboard set apart for dangerous articles. 3. That in the dispensing and selling of poisons, all liniments, embrocations, and lotions containing poison be sent out in bottles rendered distinguishable by touch from ordinary medicine bottles, and that there be affixed to each such bottle (in addition to the name of the article and to any particular instructions for its use) a label giving notice that the contents of the bottle are not to be taken internally. We may observe that the word "homologues" is retained, although, as we have pointed out, there is some doubt as to its exact meaning in this case, and, moreover, there are homologues of phenol which are non-poisonous. We believe that since this Order came into operation last September the number of cases of self-poisoning by means of carbolic acid has sensibly diminished. The total number of cases of self-poisoning by all agencies is, however, maintained, hydrochloric acid or common spirits of salts appearing to have supplanted carbolic acid as the most usual. We should not be surprised if this mineral acid has next to be placed under the same restrictions as carbolic acid as to its sale and keeping.

PROFESSOR SKLIFOSSOVSKY presided on Friday last, Jan. 11th, over a Surgical Congress at Moscow, at which many prominent Russian medical men were present.

PROFESSOR SKLIFOSSOVSKY.

A ROYAL Commission has been appointed to make investigations respecting the beer-poisoning epidemic. The Commissioners are Lord Kelvin, Sir W. Hart Dyke, Sir W. S. Church (President of the Royal College of Physicians of London), Professor T. E. Thorpe (Government Analyst), Mr. H. Cosmo Bonsor, and Dr. B. A. Whitelegge (H.M. Chief Inspector of Factories). Dr. G. S. Buchanan, one of the medical inspectors of the Local Government Board, is the secretary to the Commission. The instructions to the Commissioners are to ascertain with respect to England and Wales: 1. The amount of recent exceptional sickness and death attributable to poisoning by arsenic. 2. Whether such exceptional sickness and death have been due to arsenic in beer or in other articles of food or drink, and, if so, (*a*) to what extent; (*b*) by what ingredients or in what manner the arsenic was conveyed; and (*c*) in what way any such ingredients became arsenicated. 3. If it is found that exceptional sickness and death have been due to arsenic in beer or in other articles of food or drink, by what safeguards the introduction of arsenic therein can be prevented.

AN interesting series of articles from the pen of Mr. Bertram Wilson has appeared in *Young Oxford*, a magazine "of constructive thought and devoted to the Ruskin Hall movement." The articles are freely illustrated, chiefly with types of the victims of lead-poisoning. Mr. Bertram Wilson enters a forcible argument in favour of the abolition of raw lead in pottery making. Reference is made to those firms now producing leadless-glazed ware, specimens of which experts pronounce to be equal in beauty and finish to the old lead-glazed ware. A selection of these may be seen at Messrs. Mortlock's, Limited, 466, Oxford-street, and at Jermyn street Museum.

SIR CHRISTOPHER NIXON, President of the Royal College of Physicians of Ireland, will entertain His Excellency the Lord Lieutenant and the Chief Secretary for Ireland, with the Fellows of the College and many distinguished guests, at a banquet on Jan. 26th, to be held in the College hall.

AT an inquest at Manchester on Wednesday last some evidence was given which may throw a strong light on the beer poisoning epidemic. It was admitted by a witness, the representative of a firm of vitriol makers, that owing to pressure of orders for pure or "brimstone acid" his firm had discontinued the supply of sulphur-derived, or arsenic-free acid to a firm of glucose makers and sent in its place "stone" acid containing the common impurities arising from the burning of pyrites. The witness could not remember whether the change was notified to the clients of his firm.

IN recognition of services rendered in connexion with the recent military operations in Ashanti the Queen has appointed Mr. Donald Keith McDowell, principal medical officer of the West African Frontier Force on the Niger, lately serving as principal medical officer of the Ashanti Field Force, to be a Companion of the Most Distinguished Order of St. Michael and St. George.

THE annual dinner of the West London Medico-Chirurgical Society will be held at Frascati's Restaurant, Oxford-street, on Wednesday evening, Feb. 13th, at 7 for 7.30 P.M. Communications should be made to Dr. G. P. Shuter, Oaklands, Chiswick lane, W.

THE Lord President of the Council, in the exercise of his powers under the Charter of the University of Wales, has appointed Dr. Isambard Owen to be a life member of the University Court, in succession to the late Marquis of Bute.

THE new medical training home of the Church Missionary Society in Tanner-street, Borough, will be opened on Jan. 21st, at 3 P.M., by the Countess of Chichester.

SIR JAMES SAWYER has been elected a Fellow of the Society of Antiquaries.

REFLECTIONS ON THERAPEUTICS.

BY HARRY CAMPBELL, M.D., B.S., F.R.C.P. LOND.,
PHYSICIAN TO THE NORTH-WEST LONDON HOSPITAL AND TO THE WEST END HOSPITAL FOR DISEASES OF THE NERVOUS SYSTEM.

III.[1]

HABIT VIEWED FROM THE THERAPEUTIC STANDPOINT.

Periodic habits.—Bodily processes, especially those occurring in the nervous system, tend by repetition to recur more and more easily, and when by frequent repetition considerable facility has been attained we say a habit has been formed. Habits as popularly understood consist for the most part of acts which, voluntarily or semi-voluntarily initiated, tend by constant iteration to recur with little or no volition. Such are nail-biting, sniffing, blinking, jerking of the head and kindred movements (habit spasms), eating fast, or getting up early or late. Habits may also be formed quite independently of mental processes. If, for instance, a cardiac intermission is started from any cause the heart may, by mere repetition of the process, get into the habit of intermitting, and continue to intermit, after the original cause has been removed; in like manner the whoop of whooping-cough may persist for some time after complete recovery from the disease; similarly, the bladder may acquire the habit of spontaneously emptying itself during sleep; or again, the repeated iteration of a neuralgic seizure may lead to a spontaneous occurrence of the attacks after the removal of the exciting cause.

Now, inasmuch as some habits are injurious to health, or objectionable for other reasons, while others are favourable to health, the physician has to reckon with them as factors in therapeutics. Manifestly he will seek to break his patients of injurious habits and to inculcate such as are beneficial, and in this way the force of habit may be directed to therapeutic ends with the best results. But while habits which tend to promote health cannot be too assiduously cultivated, one must be on one's guard against

[1] No. II. was published in THE LANCET of Jan. 12th, 1901, p. 122.

becoming the slave of any habit. With increasing years habits grow on us, the protoplasm losing its plasticity and becoming more "set," as it were. This is a senile change, and we should all seek to ward off the disabilities of age and to retain our plasticity as long as possible. But even before the advent of senility, a person may, if he is not watchful over himself, get to be such a creature of habit, so bound down by routine, as to be little more than a machine; for it is to be noted that the more stereotyped a man's actions, the more limited is his sphere of activity and the less volitional is he—the more closely, in short, does he approximate to the instinct-led, machine-like brutes.[3] Moreover, there are grave inconveniences attaching to deeply-rooted, imperious habits. If an individual is only able to eat particular kinds of food, at particular times, and cooked in a particular way, he may be upset, "thrown out of gear," as he would say, when he finds himself so placed that he cannot secure all these three conditions to his liking. Sir James Paget, who, in his "Studies from Old Case Books," strongly insists upon the inadvisability of becoming the victims of habit, goes so far as to assert that a person should not get into the habit of sleeping always on one side or of going to stool at a regular hour. No doubt there is much soundness in this advice, which, generalised, amounts to this: keep as plastic and adaptable as you can; do not allow yourself to be over-mastered by habit. At the same time, his position is probably somewhat extreme, only a few fortunate individuals being capable of following out his advice as fully as he was himself able. Doubtless, however, it should be carried out as far as is consistent with health; and if only for the moral effect of the self-denial and as an exercise in self-control, it is a good plan to abandon for a time habits such as smoking, tea-drinking, and the like. "I believe," says Ruskin in a passage which I came across the other day, in which he alludes to the asceticism of the early Christian centuries, "no reasonable person will wish, and no honest person dare to deny, the benefits he has occasionally felt *both in mind and body* [the italics are mine] during periods of accidental privation from luxury and exposure to danger."[3]

Habituation to circumstances.—So far I have been considering only the habits which pertain essentially to the nervous system and are periodic in nature. But "habit" is wider in its scope than these. The animal organism possesses the property of becoming adaptively modified, or "habituated," as we say, to circumstances, and this property also has to be reckoned with in treatment. By virtue of it structure and function may be profoundly modified,[4] so as to enable the organism to work in harmony with the influences brought to bear upon it. In this way it is that man becomes adaptively modified by the conditions of his life—by food, climate, occupation, and so forth. These conditions may be such as to cause actual disease when first encountered, but by virtue of his adaptability he becomes gradually moulded by them, reacting to them ever more and more harmoniously, until at length perfect harmony may be attained, when we say that he is perfectly adapted, or habituated, to his environment. On the other hand, the environment may be of a kind to which the organism, human or other, can never completely adapt itself; but even so, it always strives to, and with varying degrees of success—from almost complete failure to perfect success. When perfect adaptation cannot by any possibility be attained we must regard the environment as necessarily morbid. Note this, however, that some adaptation tends to occur even to unmistakeably morbid conditions,[5] their morbidity lessening; and, further, that even when the morbidity seems to have entirely disappeared, some hidden morbid action may still be going on. Of this I shall presently give examples.

Instances of complete adaptation.—Acclimatisation, or habituation to a particular climate, may be complete—i.e., a climate which at first causes ill-health may gradually cease to do so. It is popularly held that a person's native air is the one best suited to him, and if it be so we may explain the fact by reference to early acclimatisation. It is a matter of common observation that people get accustomed to different kinds of food. Every nation has its own national diet, and when a person of one nationality takes to the food of another, he is at first apt to be upset by it, afterwards, however, experiencing no discomfort. It has recently been found that the composition of the digestive juices is greatly influenced by the kind of diet taken, each diet exciting just that particular kind of secretion which is best adapted to its digestion. In this way the glands acquire habits of secretion, so that when a long-accustomed diet is changed it may be some time before the glands can learn to pour out the appropriate secretion. Those who are in the habit of eating bulky food containing an abundance of fibrous, indigestible material get acute indigestion if fed on refined foods, the alimentary tract no longer being adequately stimulated by food sufficiently coarse and bulky. The contrary is equally true. Again, a person accustomed to an active out-door life is sure to suffer in health if he suddenly changes this mode of life for a sedentary one; and, on the other hand, one who leads a sedentary life may become so adapted to it that a very active life would do him more harm than good.

Partial adaptation to a morbid environment.—Let us now consider those cases where partial adaptation to a necessarily morbid environment takes place. Tobacco-smoking affords a good instance. An amount of smoking which in the beginner causes alarming collapse can be borne by the *habitué* without apparent harm—perhaps without any harm at all; but the fact that such serious effects are produced in the beginner by very small quantities of tobacco suggests that tobacco-smoking in any but the smallest quantities is necessarily poisonous, and that though the poisonous action is diminished by habituation, it never quite disappears; and experience seems to show that tobacco in larger quantities is always injurious, though the evil effects may be unperceived. The same is probably true of alcohol. Some contend that even small quantities act injuriously—certainly large amounts do; nevertheless the individual can to some extent adapt himself to pernicious doses. An amount which in the beginner produces mental obfuscation, i.e., a decidedly morbid effect, in the *habitué* produces no such result—a circumstance which may be taken to indicate that the agent is no longer morbid to him, or, though still morbid, that it is so in a less degree; but whatever may be thought of the effect of small quantities, it is quite certain that alcohol in large amounts does actually produce evil effects, though these may not be recognised. In a like manner a person may habituate himself to eat with comparatively little inconvenience an amount of food which, without such gradual habituation, it would be impossible for him to eat, the morbid effects, though still persisting, becoming less and less obtrusive. Let me repeat, then, that habituation may conceal the evil effects of a noxious agent and that we must not too hastily assume that because no evil effect is perceived therefore none is taking place.

The fact that partial adaptation to a morbid agent may occur suggests a further thought. It may so happen that an individual has become so far adapted to a noxious agent, his entire system so grown to and modified by it, that more evil may accrue from suddenly removing him from its influence than from allowing him to remain under it. Thus an elderly man with a feeble heart, accustomed for many years to generous living, may be made worse by sudden deprivation of the morbid agents—by depriving him of all alcohol and putting him upon a bland diet. We must beware, in short, of the harm which may result from suddenly altering the patient's conditions of life even though those conditions are in themselves injurious, and the older the patient the more should we be bound by this principle. Indeed, for that matter, we should beware of sudden changes of any sort—e.g., from mixed feeding to pure vegetarianism, or from a fattening diet to severe Banting treatment, and the more we keep in view the law of habituation the less likely are we to err in this respect. Nevertheless, in the case of an unmistakeably noxious agent it is generally advisable to remove the patient from its influence with all possible speed. Even in the case of chronic alcoholism experience shows that the most effective treatment consists in promptly and peremptorily cutting off all alcohol. Again, if a person has been eating too much, we may with safety at once limit the food to a sufficiency, though it may be more politic to reduce the amount gradually.

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[3] See Campbell: "The Differences in the Nervous Organisation of Men and Women."

[3] The Bible of Amiens, iii., The Lion Tamer.

[4] It is needful to distinguish between *adaptation* and *adaptability*. The latter is the power of becoming adapted. It is one of the most remarkable attributes of living organisms, one, as I have shown elsewhere, that has slowly and laboriously evolved. See "The Differences in the Nervous Organisation of Men and Women."

[5] See Campbell: "The Physiological Aspects of Disease," St. Bartholomew's Hospital Reports, 1895.

I will conclude my remarks on habit by quoting some observations of Sir Samuel Wilks. That physician is reported to have said to an interviewer: "Habit is a great deal; it is second nature. A man accustomed to walk 12 miles a day cannot do without it. Every one has a natural temperament. Follow that and avoid excesses. That's all. A quack may tell you you must eat an ounce of albumen, so much starch, so much water, and so on, and what should you do? Go and have a nice chop. The instincts of the people are right. And what about exercise? Jenner would have said to you, 'I never walk at all, except from my house into my carriage. I hate walking and if I could I would get my servants to carry me to bed.' That was Sir William Jenner, the Queen's eminent physician. In the last three or four centuries we have done better intellectual work than ever before, and these have been the times of tea, coffee, tobacco, and alcohol. What can you make of that? Again I say, follow your instincts."[6]

No doubt there is much wisdom in these words, but they must not be interpreted too literally; they must merely be taken as a protest against a too fussy interference with a man's habits and instincts. Nothing is more certain than that inclination often leads a man astray.

THE WAR IN SOUTH AFRICA.

NOTWITHSTANDING that the Boers are displaying great activity at the present time, that their forces, split up into numerous *quasi*-independent bodies, are carrying on their operations in numerous directions extending over a wide geographical area and that they are boldly making raiding incursions in the direction of Cape Town, the news is not, on the whole, unfavourable. If, on the one hand, the anticipations of military optimists have not been realised, on the other hand, it must be borne in mind that what many people regard as unsatisfactory or of serious import in the present position is, after all, of a temporary nature, that the political danger which was feared—viz., that the Dutch population of Cape Colony would rise in favour of the Boers—has not been realised, and that of the many recent attacks upon our lines of communication none have really been successful. It is the vast extent of the country over which the operations have to be extended that makes them so difficult and embarrassing. The systematic pursuit of a definite plan of action, the disposition of the British forces, and even the character of the fighting have now to be adapted to the altered conditions brought about by roving bands of raiders and filibusters. A very large addition to our mounted forces in South Africa is no doubt necessary and will be made. Still, the actual news from South Africa does not seem to justify the pessimistic tone in which some people indulge. Raiding on an extensive scale on the part of the Boers will be a source of much trouble to Lord Kitchener and may prolong the war, but this system of warfare was to be expected on their part and it cannot undo what has been already accomplished or affect the final issue. Be all this as it may, however, the prolongation of the war necessarily carries with it increased sickness and loss of life from wounds and disease, and especially from the latter. The lists of those returned as dangerously ill are long and, for the most part, made up of cases of enteric fever.

According to the latest reports from Lieutenant-Colonel Sloggett, R.A.M.C., commandant of the Yeomanry hospital, there were 25 officers and 505 non-commissioned officers and men at Deelfontein on Dec 24th last, including Lieutenant de Wet (nephew of General de Wet), who was suffering from a severe gunshot wound of the knee. Colonel Sloggett reports that he regrets to say that enteric fever is increasing and that there are several serious cases under treatment in the hospital.

Surgeon-Major Kilkelly of the Grenadier Guards, commandant of the hospital at Pretoria, reported on Dec. 20th that there remained under treatment 40 officers and 389 non-commissioned officers and men. Enteric fever was still prevalent in the vicinity. Of the 223 recent admissions 93 were members of General Clements's force from Reitfontein. Surgeon-Major Kilkelly mentioned that since the hospital was opened on August 18th, 201 officers and 1713 non-commissioned officers and men had been treated by this section of the Imperial Yeomanry hospitals, making a total of 1914 patients. Captain Turner, principal medical officer of the Imperial Yeomanry Branch Hospital at M'Kenzie's Farm, Maitland, stated that on Dec. 21st there remained in that hospital 51 patients, of whom 43 were yeomen, two being officers. He had just been enabled to erect two new huts for additional patients.

[6] Sir Samuel Wilks informs me that though the above is by no means a strictly accurate account of what he actually did say (and that altogether informally) he agrees with the general drift of the remarks

THE MEDICAL PROFESSION AND THE WORKING MAN.[1]

THE following has been addressed by "A Birmingham Consultant" to the working-men of Birmingham. It is an open letter dealing with their relations to the medical profession and having special reference to the recent experiment of the so-called "Consultative Institute." We reproduce it in our columns because we consider it to be an excellent exposition of the mutual position that the practitioner, whether consultant or general, should occupy towards that enormous and enormously important section of his *clientèle*—the working-man.

DEAR SIRS,—As a member of the profession which has incontestably proved itself for some centuries now to be your friend, and, indeed, the friend of all classes of suffering humanity, irrespective of purse or of anything but genuine need (we are not friends to humbug), I claim a generous and sympathetic hearing from you as I try to explain some of the points now at issue between the medical profession, yourselves, and some of the leaders of the Hospital Saturday movement. In doing this I would ask you to remember that we, who consistently give a great portion of our lives to your service and who, if we finally get well-to-do, obtain this competence chiefly out of the pockets of the rich and not out of the pockets of the poor, are at least quite as deserving of consideration and respect as those employers of labour (estimable men though they be) who begin to make big fortunes from their youth up and this directly by the employment of your labour.

1. From your letters you are evidently dissatisfied with the general practitioner, or, as you rather rudely term him, the "G.P." Will you allow me to tell you that you are largely responsible for this? When provident societies and clubs were first started he was perhaps too generously glad to help you, and between you both you have compounded a system for which you are supposed to obtain good medical attendance and medicine at one penny a week or even less than this. Of course you do not obtain it. You cannot obtain it except in isolated instances. The penny fee does not amount to a living wage for the poor practitioner you employ, and the utmost you can expect from him as he tries to see his 70 or 80 patients in the day is a kind word and a bottle of something which shall not injure you. He himself, if I understand him aright, will not take grave exception to my description of your relations, and ready and anxious though he be for opportunities of better work, will acknowledge that he cannot give this, and that you and circumstance are making his work shoddy and his life a burden.

2. Having succeeded in manufacturing a cheap and shoddy method of attendance at your homes you are now dissatisfied. You find, perhaps, that diseases are neglected and complaints overlooked. What is the remedy? Your wise and clever counsellers proceed to try and make for you a cheap and shoddy consultant, or what they call a consultant. In the present instance they choose a young man who has passed the examinations in Dublin successfully but who has never held any hospital appointment, and, so far as we know, has not done any original work. He comes to the City without any facilities for higher and scientific work, and is necessarily cut off by his own action from all the best avenues of professional education and enterprise. The authoritative declaration by the General Medical Council that his position is unprofessional now absolutely marks and, for the present, fixes this isolation. He is labelled a consultant by the wiseacres who exploit him, but of course he is not one. Even if he was just the stuff from which in course of time a true consultant might be developed the very terms of his employment would militate against this development. He is not his own master. As the hired servant of his committee every day is portioned out for him by them for the convenience of the public, and if, as his masters hope, the work become more than self-supporting, a dreary round of toil ensues which is fatal to all progress. Crushed between the upper and the nether millstones of his committee and his public he cannot well be anything but passive to the grinding, until every trace of originality and independence is finally destroyed in him.

3. How, then, is a true consultant made? The leaders in their profession are always those who have voluntarily made the task of money-getting subservient to the study of disease. Only a portion of this study is involved in the actual seeing of patients, the study which is of quite as great or greater importance to the consultant's progress is that which he undertakes, without any immediate fee or reward, in the post-mortem room, in the laboratory, in the operating theatre, in the museum, at the meetings of learned societies, and in his own study. For this strenuous life, devoted to the mastering of his profession, a delicate and careful apportioning of time is needed, a division of his day proportionate both to the strength and needs of the master. The consultant must emphatically be his own master. When he sees before

[1] Published by Cornish Brothers, 37, New-street, Birmingham, 1900. 1d.

him a new problem needing elucidation or some promising opening for special work he should be free at once to narrow down his energies to the special object needing them. If his chamber practice be too exacting he must be at liberty by raising his fees to lessen his work in this direction. If he require to visit other cities either at home or abroad he and his patients must be content to accept a temporary loss until the work is carried through. Whatever engagements he undertakes he will undoubtedly keep, but these should be voluntary and consistent with that utter devotion to his profession which should be the mainspring of his life.

I am drawing no ideal picture. What I have been describing is, indeed, the actual life of some of the best consultants personally known to me in Birmingham—consultants who, though charging good fees from those who are able to pay them, are not making large incomes but spending much, if not most, of their time in original work and teaching, increasing their own knowledge and that of the profession generally in the special field of medicine or surgery which is their present study, and so acquiring a solid reputation among their brethren.

4. Are such consultants inapproachable by any but wealthy patients? By no means. The very poorest can see them at the hospitals, and those less badly off but unable to pay the usual fee can always, directly or indirectly, ask for special consideration. This when really deserved is, in my experience, always granted. But a man of this stamp (and anyone lower than this in aim and work can only be a bogus consultant) will not be dictated to. He will not be made to see Mr. Jones or Mr. Smith against his will, or be made to see 30 patients and receive 30 half-guinea fees during the course of the day to the exclusion of all other work and impairment of his ideal. However much you may seek after it and try for it you will never make such a man see an indefinite number of you at half-a-guinea a time without "by your leave" or explanation. Understand this, realise it well, and you will never again make the mistake of supposing that you can hire a real consultant and exploit him at your will.

5. But you may ask me, "What then should we do to improve our relations with the medical profession and to obtain better advice and attendance not only for ourselves but for all self-respecting families with little incomes?" Let me tell you. First, as regards those of you who are provident and belong to medical clubs and sick societies. We shall want that half-a-guinea you think of throwing away at the so-called Consultative Institute—which is, after all, only the office or room of a very expensive general practitioner—and by help of it you may do a very great deal. Band yourselves together to alter your club rules, or if you cannot do this, start fresh clubs for medical attendance and let half-a-guinea a year be your regular insurance premium to your doctor. For this you may expect and obtain that care and consideration which your illness may demand. If only your financial relations with him are reasonable and right so that he can afford to give you time and trouble you will find that the general practitioner is much more worthy of your warm appreciation and a much more able guide than at present you have any conception of. Never in the whole history of the profession was the education for it made so stringent, so protracted, and so costly. No other profession is really so expensive and so onerous in its demands, and the qualified practitioner who has successfully passed his examinations is usually far above the average man both in general intelligence and in special knowledge. He may not and will not know everything—you must not expect this—but if you do not degrade him as your slave you may look up to him as your friend. When you want the services of a consultant or specialist, and are unable to pay the usual fees, speak to this friend who knows your circumstances, and he will speak for you to the consultant.

But one difficulty lies in the path of the general practitioner and yourselves when arranging for a consultation—a difficulty that has never been fairly met by those who insure against ordinary medical attendance. The consultation is a very disturbing element in general practice. It upsets the order of the day, and by interference with the general course of work costs the practitioner a very considerable amount of extra trouble. If the practitioner then is to welcome the consultation, he must be adequately recompensed for the accompanying trouble. How is this to be done? I think a portion of the half-guinea (perhaps the sixpence will be sufficient) should be set aside for this purpose, and from the small fund accruing a fee of four or five shillings should be available to be paid directly to the practitioner for every consultation. In this way the requirements of the practitioner might possibly be met without any further call on the resources of the patient other than that necessitated by the consultant's fee.

Secondly, as regards those who do not insure against illness, but are only able to pay very moderate fees for attendance. One of your great difficulties—perhaps your chief difficulty—is the danger of a doctor's bill for prolonged attendance and medicine, and you would rather when you consult a doctor pay a somewhat larger fee and have your prescription or advice, than be given a bottle of medicine and told to attend indefinitely. Well, then, say so when you consult your doctor, and I have no doubt he will oblige you. There are some general practitioners who specially cultivate this kind of practice. In the treatment of diseases of special organs there are also specialists who may be consulted at a fee of one guinea or half a guinea, but every practitioner, without exception, will receive a request for such attendance with every consideration and respect, and unless he sees grave reason against it (as in acute disease requiring careful watching) will willingly accede to the patient's desire. Even in these cases of acute and severe illness among those who are poorly off, the practitioner is usually willing to receive some system of weekly payment, so as to avoid the necessity of a long and heavy account.

6. I have dealt rather extensively with the difficulties of the patient and general practitioner, because these lie at the root of all the other difficulties between the patient and consultant. Set these initial difficulties right and no genuine sufferer need go unrelieved if relief be anywhere attainable. The natural channel of communication between the patient and the consultant is the medical attendant or general practitioner, and no other is so right or fitting. Therefore, see to it that this channel is pure and effective. See to it that your doctor is not the overtasked slave of a medical aid association, but your independent adviser, who is properly and justly paid a reasonable fee for his services.

And when you need a consultant, if your doctor refuses to advise you, inquire for the physician, or surgeon, or specialist whose hospital work in your city is both well known and honourable, and do not be misled by the lax morality of the open market which booms the shoddy garment and the quack medicine, and now is even attempting to invade professional life with unhallowed advertisement.

Birmingham, Dec. 15th, 1900.

Birmingham is a shrewd city and an important centre of thought. The Birmingham working-man ought to be brought to see that it is to his direct advantage to pay those whom Mr. Arthur Chamberlain calls "street doctors" properly. For in this way he will have a ready help in need as well as a medium through whom he can obtain the services of genuine consultant medical men upon such terms as his means warrant.

SCOTTISH POOR-LAW MEDICAL OFFICERS' ASSOCIATION.

THE following is the annual report of this association which has just been presented by the officers:—

During the past year the committee met nine times, the average attendance being eight members.

The Bill to amend the Local Government (Scotland) Act was read a first time on April 3rd. Several attempts to get a second reading were made but, unfortunately, without success. Alexander Cross, Esq., M.P., will again introduce the Bill on the assembling of Parliament. Would each individual member of the Poor-law medical service approach his Member of Parliament, personally or by letter, asking him to give our Bill his support and, if possible, assist Mr. Cross in the ballot? Petitions in favour of our Bill were presented to Parliament by the Aberdeen, Border Counties, Dundee, Edinburgh, Glasgow, Perth, and Stirling branches of the British Medical Association, also by the Glasgow Medico-Chirurgical, Glasgow Southern, and Glasgow Eastern Medical Societies.

A voluminous correspondence has been carried on during the past year with several parochial medical officers in the highlands and islands emphasising their special grievances (official residences, payment of locum tenens, &c.). Your committee after careful consideration could only come to the conclusion that while those special grievances were *real and claimant*, it was impossible to bring them before parish councils with any hope of success so long as medical officers were liable to dismissal without any cause being assigned, but that those grievances would require to wait until a more secure tenure of office was secured. Your committee regret that this finding has not given universal satisfaction to our friends in the highlands and islands.

In response to inquiries from a number of members in various parts of the country, the question of fees for lunacy and vaccination defaulters was brought prominently before the committee. From inquiries made it appears the utmost variety exists in regard to payment of fees under the Lunacy and Vaccination Acts. Each parish council appears to be a law unto itself, notwithstanding the regulations of the Local Government Board, which are very precise and distinct. Thus, in the rules issued in 1897, on page 108, it is distinctly stated that the fees under the Lunacy Act are not to be included in the salary of the medical officer under the Poor-law Act. And also on page 175 it is distinctly stated that the remuneration for vaccination shall be by fees for every child the medical officer may have visited for the purpose of vaccination. Now, what do we find?

LUNACY.

1. We believe some parish councils, acting on the instruction for their guidance, pay a fee of 21s. for every certificate of lunacy.
2. Some parish councils *pay no fee* for lunacy certificates belonging to their own parish, but pay a fee of 21s. for each lunacy certificate belonging to another parish.
3. Some parish councils *pay no fee* for lunacy certificates belonging to their own parish and *no fee* for lunacy certificates belonging to other parishes, but in making up their accounts against other parishes *always charge a fee of 21s.* for each lunacy certificate.

VACCINATION.

1. We believe some parish councils pay no fees for vaccination and may or may not grant their medical officer a lump sum.
2. Some parish councils pay only for those cases successfully vaccinated by the medical officer instead of paying for every case in the list furnished by the inspector whether the case has been previously vaccinated, unfit for vaccination, not found, or dead.
2. Some parish councils, acting up to the regulations, pay for every case on the list furnished by the inspector.

Your committee think that the attention of the Local Government Board ought to be called to those flagrant deviations from their official rules for the guidance of parish councils.

Dr. GILBERT CAMPBELL, 14, Hamilton Crescent, Partick, Chairman.
Dr. MATTHEW MARTIN, 737, Gallowgate, Glasgow, Treasurer.
Dr. W. L. MUIR, 1, Seton Terrace, Glasgow, Secretary.

Glasgow, January, 1901.

BRISTOL DISPENSARY.—**The annual report of the Bristol Dispensary for 1900, which has just been issued, states that 10,060 patients were treated during the year and that medical assistance was also given in 24 difficult midwifery cases. The committee add that the branch of the dispensary at Bedminster is much appreciated and that the number of patients attended is larger than in the preceding year. The financial statement shows that the number of subscriptions has declined during the past year.**

HISTORY OF THE HOUSING QUESTION IN LONDON.

PART II.[1]

UNDER THE COUNTY COUNCIL.

IT was not, as we have seen, till 1889 that London at last possessed a municipality. It is true that instead of being called the Municipal Council of London it is denominated the County Council, and that instead of having its headquarters in the City the very heart of the metropolis has been subtracted from the metropolitan jurisdiction and still continues to govern itself as if it were a separate town. This is one of those many anomalies in which the British nation seems to take special delight and helps to confirm the opinion, widely entertained on the continent, that all Englishmen are more or less eccentric. This is not, however, the time or place to discuss whether the City should have been included as one of the constituencies of the London County Council. It is more to the present purpose to note that the County Council had no sooner been elected than it began to study what amendments were required to render the Acts on the housing question more effective, and it was able to make representations on the subject by the end of the first year. This was promptly followed by legislation, and we had the Housing of the Working Classes Act of 1890, so it cannot be said that much time was lost, at least at this stage of the proceeding. It would take much space to explain all the bearings of this Act. Divided into seven parts, the first three parts apply especially to London and the remainder to the provinces and to Scotland. Part I. constituted the County Council as the only authority for carrying out Cross's Acts of 1875, 1879, and 1882, which were consolidated and amended and which deal with large areas. Of great practical importance was the creation of the post of medical officer of health to the County Council, thus bringing into existence a superior and supervising sanitary authority who is independent of the local vestries or district boards, now replaced by the new borough councils. Thus, if the smaller local authorities fail to act the medical officer of the County Council can intervene, and the County Council can carry out a scheme where the local body fails. Then it is stipulated in Part I. of the Act of 1890 that the compensation paid to the expropriated proprietors of condemned houses shall "be based on the rental which would have been obtainable if the house or premises were occupied for legal purposes and only by the number of persons whom the house or premises were, under all the circumstances of the case, fitted to accommodate without such overcrowding as is dangerous or injurious to the health of the inmates." Further, if the house was in such a condition as to create a nuisance the likely cost of doing away with such nuisance and putting the house in proper repair is to be deducted from the estimated value of the premises. Finally, if the house is in such an utterly dilapidated condition that it would be impossible to render it fit for habitation then the owner is only to be compensated for the value of the land and of the materials on it.

With such stipulations it should be possible to reduce the compensation to be given to reasonable proportions. But property acquired under this Part I. of the Act has to be re-sold within ten years unless the Secretary of State shall otherwise decide. Part II. of the Act has for purpose to consolidate and amend Torrens's Acts of 1868 and 1882. The Local Government Board and the Secretary of State are to supervise and confirm schemes carried out under this part of the Act. It deals with individual dwellings and obstructive buildings rather than with large areas. Both district authorities and the County Council may take action and they may close a house as unfit for habitation. If this does not suffice they may, having obtained a magistrate's order, proceed to demolish the house. A house that merely obstructs ventilation may also be removed, and in that case the owner may, if he chooses, retain the land, but then he is only compensated for the building. The Local Government Board decides what provision, if any, must be made for re-housing the persons disturbed, but the question of re-housing is not so urgent, as this part of the Act can only be applied to a few houses. The rules in regard to compensation are the same as under Part I., excepting that deductions may be made if the improvements to be effected increase the value of other property held by the same owner. Under Part II., as under Part I., the land acquired must be sold within ten years unless otherwise decided by the Secretary of State; and he also determines what proportion of the cost shall be paid by the local authority and what by the County Council. To carry out such schemes the County Council has borrowing powers and may lend borrowed money to the district authority.

We now come to the much-discussed Part III., which seeks to amend and consolidate the Labouring Classes Lodging Houses Acts of 1851 to 1867. It first extends the meaning of the terms used so as to include a cottage with a garden of not more than half an acre, if the ground value does not exceed £3 per annum. Power is given for compulsory purchase of land, for the erection of lodging-houses, for fitting and furnishing the same, but the scheme for such purchase must be made public and the petitions in favour and against it submitted to the Secretary of State who may dismiss them or order further inquiries to be made. Then a provisional order sanctioning the compulsory acquisition of the lands may be issued, but it must be served on all concerned and confirmed by an Act of Parliament. If sanctioned the compensation to be paid is settled according to the Lands Clauses Consolidation Acts of 1845, 1860, 1869, and the special clauses of Parts I. and II. of the present Act. But the most salient feature of Part III. is that it confers no power to sell or lease the land purchased under this part of the Act; therefore, the Council was itself obliged to erect, manage, and let the lodgings or tenements to be built on the land. The land could only be sold when other land better suited for the purpose could be purchased with the price realised. Further, if lodging-houses have been open for seven years or more and have become unnecessary or too expensive they may be sold if the Secretary of State approves. The borrowing powers are the same as under Part I. and various kinds of corporations, trusts, &c., may borrow and various public bodies may lend money for the erection of working-class dwellings. On paper this Act, and especially Part III., gives promise of prompt reform; in practice its application has been found cumbersome and expensive. It is the question of compensation which, in spite of amendments and modifications, continues to occasion wearisome, prolonged, and expensive litigation.

The next legislative enactment was the Public Health (London) Act of 1891, giving effect to many of the recommendations made by the Royal Commission of 1884. It emphasises the duty of the district authorities to inspect and abate nuisances and to prevent overcrowding. Provision is made for petty sessional courts to deal summarily with such cases by means of prohibition and closing orders; and where two convictions for overcrowding have occurred within three months the court may order the house to be closed for such time as it may deem necessary. The borough councils must now fix what number of persons may occupy each room in a house let in lodgings or occupied by the members of more than one family, and must provide for the separation of the sexes, for the registration of houses so let or occupied, for the inspection of such houses, for their proper drainage, cleanliness, and ventilation, for the cleansing and limewashing at stated intervals, and for the taking of proper precautions in case of any infectious disease. If the borough councils fail to carry out these regulations the County Council may take action, and the expenses of such action may be recovered by the County Council from the borough council which has neglected its duty. Or, again, the County Council may complain to the Local Government Board if a borough council is neglectful and the Local Government Board may by writ of mandamus force the borough council to take the necessary measures. Here again, if written laws were of themselves able to alter social and economical conditions, it would be thought that, in the face of such stringent enactments, insanitary dwellings and overcrowding would vanish away as if by magic; and yet all those who are personally acquainted with the conditions under which the London poor live are painfully aware how far we are from attaining any such ideal conditions.

The London Building Acts of 1894 and 1898 regulate the amount of open space that must be provided in all new streets both in front and at the back of the houses and this in proportion to the height of the houses. No house is to be built to a height of more than 80 feet, exclusive of

[1] Part I. was published in THE LANCET of Jan. 12th, 1901, p. 124.

the roof, without a special permission from the County Council, and in streets that are not more than 50 feet wide the houses must not be higher than the width of the street. But though this rule only applies to new thoroughfares it has a retrospective action with respect to working-class dwellings that are built within 20 feet of the centre of any highway. The latter must not exceed in height the width of the street whatever may be the date at which they were built. For streets laid out after 1894 the space behind the houses must have a width of at least half the height of the house. If it is a working-class dwelling this space behind may not be covered up; for other houses it may be covered to the height of 16 feet only.

In 1894 there was yet another Housing of the Working Classes Act. This was to extend the borrowing powers limited by Part II. of the Act of 1890 to the purchase money or compensation for properties acquired. But there are many other heavy incidental expenses, such as the preparing, sanctioning, and confirming a scheme, costs and fees, the laying out and sewering of new streets, &c., which had to be paid out of the current rates. The new Act sanctioned that these costs should be added to the sum for which borrowing powers were demanded.

Finally, we have the Housing of the Working Classes Act of 1900. The first important feature of this the last law enacted on the subject is that henceforth both the County Council and the borough councils of the metropolis may not only "establish or acquire lodging-houses for the working classes" within their own boundaries but may do so outside the limits of the county or the borough. Combining this with the organisation of cheap tramway or railway services it should be possible to relieve the congestion in central districts by removing a portion of the population to sites beyond the metropolitan area. Of course, this is only a partial solution of the difficulty applicable in some and not in all cases. Nor is the saving in expense so great as it seems at first sight. By removing a section of the population beyond the boundaries we reduce the rate-paying capacity of the inhabitants of the borough or county. While the local authority thus loses some of its financial resources the lodger or workman incurs extra expenses which counterbalance to some extent the economy he may make in paying cheaper rent. First, he has the cost of travelling backwards and forwards to his work—a cost which is as serious in time lost as in the outlay for his railway or tramway ticket. But what is perhaps more serious is the increased cost of food. The worker can no longer go home for his midday meal, and the money he has to pay at an eating-house would suffice, not only for his own food, but that of some members of his family. Then, again, the cost of provisions is generally higher in the outlying suburbs than in the central districts, where there is fiercer competition and more to choose. Nevertheless, for a section of the working-class it will prove an advantage to live beyond the metropolitan boundaries, but not for all.

The Act of 1900 also modified the critical Part III. of the Act of 1890. The County Council may now lease any land acquired under and for the purposes of Part III. if the lessee will undertake to carry out the Act—namely, to build and maintain on the land lodging-houses within the meaning of the Act. But in the lease provisions must be carefully inserted that such building must be kept in good repair, must be utilised exclusively as lodging-houses, and if the character of the buildings is in any way altered without the consent of the County Council then the lease lapses and the council have a right of re-entry. Therefore, the dwellings built on the land purchased under Part III. need no longer be erected and managed by the council, but this may be intrusted to anyone who will undertake to provide lodging-houses according to the conditions laid down. If a council pleads that it is not competent to act as the landlord of a number of poor and dissolute people it has the power by this new Act to lease the land to someone who is competent to do this somewhat unpleasant and rough work.

Of course, all this legislation was brought about in a great measure by the remonstrances which the County Council was induced to make in consequence of the great difficulties it had to encounter. No sooner had the council come into existence than it convoked a conference of all the local authorities to discuss the housing question. The first conclusions arrived at were that in building the council must keep in view what was likely to be the standard of sanitation in the future, so that their houses should not fall below that standard. In the long run it would prove cheaper to build well, but for the moment this would increase the difficulties. A number of regulations were drawn up in regard to the size of the rooms, the width of the stairs, the washhouse accommodation, &c. The staircase should be at least four feet wide, with a dado of hard glazed bricks. Closets should have doors and windows opening directly to the open air. No living room should be less than 144 square feet or bedroom less than 96 square feet, and at least nine feet high, and a dwelling-house should be at a distance of one and a half times the height of the nearest obstructing building. But it was soon found that such regulations involved too great a cost, and the height of the rooms was reduced to 8 feet 6 inches and the width of the stairs to 3 feet 6 inches.

By the time the County Council had been in office one year the number of insanitary areas brought under its notice amounted to 146. By the end of the year communications had been sent by the County Council to the vestries or district boards concerning 58 insanitary areas. About three-fourths of these areas brought to the notice of the County Council have now been improved and many houses have been demolished under Torrens's Acts. For larger areas 12 schemes were prepared by the vestries and district boards and four by the council, all of these under Part I. of the Housing of the Working Classes Act of 1890. But as it was found so very difficult to dispose of the land the council soon concluded it might be more expedient if it sought to fulfil the statutory obligations by itself erecting the dwellings. But to do this it was necessary to regulate the cost of building in accordance with the income likely to accrue. Hence the council passed in March, 1893, what is known as "the 3 per cent. resolution." This resolution laid down the principle that though the rents charged for the dwellings were not to exceed the general price prevailing in the neighbourhood, yet they were to suffice to pay all outgoings, interest, and sinking fund charges. To do this the design and plan of the buildings must be kept down so as not to involve too high a cost. Hence the modifications made as to the size of the rooms, width of staircases, &c., as mentioned above. Under the Treasury regulations the Council must provide a sinking fund that shall repay the capital cost of the land and building within 60 years. A cumulative annuity of 2½ per cent. is provided for this sinking fund and from 2½ to 3 per cent. more has to be paid as interest for the money that is borrowed. Therefore, the dwellings which the Council build must bring in rents enough to pay all cost of management, repairs, taxes, &c., and from 5 to 6 per cent. on the capital outlay to cover interest on borrowed money and provide for the sinking fund or amortisation. But when to meet these liabilities the County Council wanted to reduce the size of the rooms, &c., the Secretary of State objected. In 1894, before these objections were made, the Sonning-buildings, Boundary-street, were designed, with sculleries for the common use of several tenements but a separate w.c. for each tenement, and these are the cheapest buildings the council has erected. In 1897 the Secretary of State, judging from information received and experience acquired, concluded that the most suitable size for a living room was 160 square feet and 110 square feet for a bedroom, but if the tenement consisted of two bedrooms then they might measure 100 and 120 square feet respectively. This was accepted as the standard and rigorously enforced ever since. But other stipulations were also introduced at the same time. Thus an angle of 45 degrees of light has to be provided for all habitable rooms, and the number of persons using a staircase limited according to the size of the staircase. Several plans that had already been accepted had to be altered to meet these new exigencies. All this is admirable from the sanitary point of view, but it adds to the financial difficulties.

There is an anomaly in regard to this supervision of the plans of proposed dwellings. Those that are to be erected under Part I. must be submitted to the Secretary of State, but if action is taken under Part II. of the Act then the Local Government Board is the controlling authority and what may satisfy the one may not be approved by the other. Thus the Local Government Board is more particular in regard to thorough ventilation and rejected on this ground the plans of the East-end Dwelling Company for the buildings it proposed to erect in Ann-street, Poplar. Then in regard to Crawley-building, Brooke Market, Holborn, the closets were condemned as not sufficiently separated from the dwelling rooms. Wire gauze had to be substituted for the windows in the lobbies leading to the closets. Now it is found

that the tenants strive to block these openings by hanging up unsightly rags. Then the Local Government Board objected to staircases rising direct from the kitchen to the bedrooms above in cottages and also protested that the walls were not of sufficient thickness. Open staircases exposed to all weathers found favour with the Local Government Board, but were strongly objected to by the tenants, and a compromise had to be effected by putting windows in the lower part of the opening. Again, the tenants desired self-contained instead of associated tenements, which, of course, cost somewhat dearer. In regard to the size of the rooms the Local Government Board and the Home Office agree to the same standard, but the tenants do not agree and urge that every tenement should have at least one bedroom measuring 120 square feet instead of 110 square feet. On the other hand, the enormous cost of carrying out these schemes compelled the council, in the years 1898 and 1899, to revert to their minimum standard of 144 square feet for living rooms and 96 square feet for bedrooms. Thus does the balance fluctuate, weighted down at one time by sanitary exigencies and at another by financial restrictions. Evidently the key to the solution of the difficulty is to be found in the financial side of the problem.

THE REPORTS OF THE WATER EXAMINER TO THE LOCAL GOVERNMENT BOARD ON THE METROPOLITAN WATER-SUPPLY.

IN an annotation which appeared in THE LANCET some months ago[1] on the monthly reports of the Water Examiner to the Local Government Board it was pointed out that the chemical examinations of the water made by the analyst appointed by the Board were less numerous than the importance of the matter demanded. At that time one examination per month was made of one specimen only of the water supplied by each company. We are glad to be able to record the fact that a larger number of specimens are now examined. The Water Examiner to the Local Government Board at length considers it desirable that the number of samples should be increased and that the places from which they are drawn should be more widely distributed over the areas supplied by the individual companies. During the months of August and September, 1900, from 12 to 14 samples of water were taken from the mains of each company. The examination of these samples was, however, confined to the estimation of the amount at two temperatures of oxygen consumed (which is taken as the measure of organic pollution), the amount of albuminoid ammonia (which is taken as the measure of nitrogenous organic pollution), and the degree of turbidity (which is taken as the indication of efficiency of filtration or of "disturbances in the mains"). The usual monthly analyses of one sample of each water supplied by each company has also been supplemented by like determinations as to the oxygen consumed and the amount of albuminoid ammonia present.

We recommend that an examination of the Thames supply of the East London Company be made daily, at any rate during periods at which the Thames is at flood. No arrangements are made at the Thames station of the East London Company for the purification of water by sedimentation. The Thames water which is here filtered is mixed with some well water pumped at the filtering station, and this mixed supply is pumped to one of the reservoirs of the East London Company. This reservoir is also supplied by water from the Lee Bridge works of the company. It is therefore advisable that an examination should be made of the water as it is drawn from the filter-beds of the company at the Thames station. Most of the monthly reports of the Water Examiner state that samples collected at the works of the companies were efficiently filtered, but it is not stated that these results were arrived at by the analyst appointed by the Local Government Board, nor is there any indication that any special attention has been given to a determination of the effects of filtration without previous sedimentation of the Thames water distributed by the East London Company.

During the months of August, September, October, and November the condition of the natural Thames water was good throughout. The flow of the river was, during the greater part of the time, below the average summer level, and the rainfall during the period was small. Dr. T. E. Thorpe, F.R.S., the analyst appointed by the Local Government Board, reported that a sample drawn from the mains of the Lambeth Company during the month of August contained the highest proportion of organic carbon, and that the water supplied by the same company exhibited the deepest average tint of brown. Taking the filtering area of the West Middlesex Company as the normal it may be noted that a corresponding area of the Lambeth Company is little more than half of what it should be; the filtering area per 1,000,000 gallons in the case of the West Middlesex Company is 0·88 acre, that of the Lambeth Company is 0·48 acre. It may also be pointed out that the average rate of filtration is much greater in the case of the Lambeth Company than in that of the West Middlesex Company. The average rate of filtration per square foot per hour in the case of the West Middlesex Company during the month of August was 1·25 gallons and that of the Lambeth Company 2·20 gallons. The reserve capacity of the Lambeth Company also compares very disadvantageously with that of the West Middlesex Company. The capacities of the reservoirs for unfiltered water possessed by the West Middlesex Company are capable of holding a supply sufficient for the wants of the company for 18·5 days, but the capacities of the reservoirs of the Lambeth Company are sufficient only to contain an amount of water for the supply of their customers for five days.

During the month of September Dr. Thorpe examined 96 samples of the water supplied by the various companies, and the result showed that the amount of oxygen consumed was greatest in the case of the Lambeth Company; the Chelsea and Southwark and Vauxhall companies contained the greatest amount of albuminoid ammonia; and the water supplied by the Lambeth Company exhibited the deepest average tint of brown. During the month of October of 14 samples of the Grand Junction Company's water eight were clear and four—which were drawn from a stand-pipe at Shepherd's Bush-green—were distinctly opalescent and contained finely divided oxide of iron which the analyst believed was derived from the mains. The sample taken from the mains of the Grand Junction Company contained the highest proportion of organic carbon; the water of the Lambeth Company exhibited the highest average tint of brown. The Grand Junction Company possesses a smaller relative reservoir capacity than any other company; it is even smaller than that of the Lambeth Company, and is sufficient only to supply the wants of the company for 2·9 days. The Water Examiner points out that the Grand Junction Company has the means during floods of pumping water from the gravel beds adjoining the Thames, and "this is practically equivalent to an addition to their storage reservoirs." There is no statement in the report, however, as to the quantity of water which is in fact derived from the gravel beds, nor is any estimate given as to what amount of reservoir capacity this gravel water is practically equivalent to. These are points it would be interesting to know.

During the month of November the samples of water supplied by the Chelsea, Southwark and Vauxhall, New River, and East London companies were clear and that of the Grand Junction Company was also clear, except a specimen taken from a standpipe at Shepherd's Bush which was turbid. The engineer of the company explained that in his opinion the turbidity was caused by the fact that the standpipe was near to the dead end of a main, and he further stated that the defect had been remedied. It is not stated by what means this was done. The water supplied by the Grand Junction Company again contained the highest proportional amount of organic carbon; the water of the Lambeth Company exhibited the deepest average tint of brown. The amount of organic matter in the supplies of all the Thames companies showed a slight increase over that found during the previous month and the greatest increase was noted in the case of the Grand Junction Company.

The water supplied by the Kent Company during the whole period under review was, as usual, of excellent quality.

[1] THE LANCET, Sept. 8th, 1900, p. 748.

IT has been resolved by the Whitechapel Board of Guardians to convene a conference on the question of overcrowding.

THE BATTLE OF THE CLUBS.

ROTHERHAM DISTRICT.

THE old difficulties between friendly societies and their medical officers are assuming an acute form in the Rotherham district. The medical men concerned gave the clubs notice that after March 1st of the current year the fees for adults and juveniles belonging to friendly societies would be the same—viz., 1*s* 3*d*. per quarter or 5*s*. per annum. Previously the rate for adults had been 4*s*. per annum and for juveniles 2*s*. per annum. In answer to this the secretaries of the different lodges met and it was decided to form a medical aid association so as to be independent of the local medical men. We notice that the *Rotherham Express* states that the circular which was issued convening the meeting of secretaries referred to the extension of assistance to "wives, children, fathers, mothers, nephews, and nieces." Even the *Rotherham Express*, which obviously sides with the friendly societies, admits that this "is enlarging their borders with a vengeance." The present medical officers ground their request upon the well-known facts that their remuneration is upon the same scale as formerly, while against this wages have gone up and the cost of drugs, instruments, and dressings has also increased. Living is more expensive than formerly, while in addition no unqualified assistant may be employed, and the remuneration of qualified men acting as assistants has naturally increased. We do not in the least blame working men for trying to get medical attendance as cheaply as they can, but it is inconsistent of those men who are always agitating for and getting a rise in wages to object so strongly and selfishly to raise the wages of those whom they employ. A miner or an ironfounder undoubtedly works hard, but when he has finished his shift it is finished. Now a medical man's work is never done; for him there is no eight hours' day. At any time of the day or night he is liable to be called upon—it may be for something trivial, it may be for some disease or injury which may be irremediable if not promptly treated. 5*s*. per annum is less than 1½*d*. a week—not a very large sum for a man to spare who is getting good wages, as miners do, and very many of the members of the clubs concerned are miners whose wages have gone up, or will have after February, 60 per cent. in the last 12 years. The only thing to do unless the clubs should give way is for the medical men concerned to organise themselves. How organisation succeeds is very well shown by what happened at Cork and other places, accounts of which will be found in "The Battle of the Clubs" by our Special Commissioner.

CHESTERFIELD DISTRICT.

The club difficulty has also come to a head in the Chesterfield district where the eight medical men attached to a field club have demanded a rise of 1*s*. per member per annum, thus raising the yearly subscription of members from 4*s*. to 5*s*. per annum. At the quarterly meeting of the British United Order of Oddfellows the question came up and a proposal was made that the lodges should affiliate and take united action, but apparently no definite course of action was decided upon.

ASYLUM REPORTS.

Glasgow Parish, Govan and Lanark District Asylum, Kirklands (*Report for the year ending April 30th, 1900*).—The average number of patients resident during the year was 200 and comprised 105 males and 95 females. The admissions during the year amounted to 59—viz., 32 males and 27 females. Of these one male and four female patients were not first admissions. Dr. James H. Skeen, the medical superintendent, states in his report that the admission rate for the year has been higher than it was for the previous two years. The bodily health of those admitted was fairly good, though as usual there were several patients much broken down in health. "Many were suffering from severe illness and one or two from nothing less than brutal ill-usage in their own homes." The mental ailments of those admitted included a large number of cases the chance of recovery of which was practically *nil*, 33 per cent. of the total admissions belonging to this hopeless class. Among the causes of insanity in the admissions alcohol holds the first place, next in order of frequency come brain diseases, childbirth, and nursing and domestic troubles. The number of patients discharged as recovered during the year amounted to 23, or 11·5 per cent. of the average number resident. The proportion of recoveries has not been quite up to the average of the past 19 years. The number of deaths in the year amounted to 11, or 5·5 per cent. of the average number resident, and was one of the lowest numbers on record. Of the deaths one was due to old age, one to abdominal cancer, one to renal disease, one to cerebral hæmorrhage, two were due to epilepsy, and two to pulmonary phthisis. No serious casualty occurred during the year. One patient, a female, while out on probation in the care of her friends escaped after providing herself with male attire. She made her way to Dumbarton and worked there as a baker's lad for three weeks, when her sex was discovered. She then disappeared from there and made her way to Bothwell where she worked as a baker's boy. She was then discovered and taken into the care of philanthropic people and was understood to be doing well. A severe epidemic of influenza visited the institution in the spring of 1900. Luckily its duration was brief, but while it lasted it caused much inconvenience, as upwards of 50 patients and about 20 of the staff were confined to bed at one time. All made good recoveries except one, a female patient, who died. Among the long-felt wants are better sick-room accommodation, a better laundry, and houses for married attendants. There is an urgent need for water-cocks, two in front and two at the back of the building, for use in case of fire. The Commissioners in Lunacy state in their report that the case-books and registers were found to be carefully and correctly kept, and that the wards and dormitories were clean and in good order. The register of restraint and seclusion contained no entry for the year.

London County Asylum, Colney Hatch (*Report for the year ending March 31st, 1900*).—The average number of patients resident during the year was 2543, and comprised 918 males and 1625 females. The admissions during the year amounted to 591 and of these 234 patients were males and 357 were females. Of these 126 (comprising 37 males and 89 females) were not first admissions. Dr. W. J. Seward, the medical superintendent, states in his report that the total number of admissions was 103 in excess of the number in the previous year. Among the admissions were 50 patients suffering from epilepsy and 40 from general paralysis, 35 of the 40 being males. 61 patients were transfers from other asylums and nine were criminal lunatics admitted from prison. As regards the causes of insanity among the patients admitted hereditary tendencies were ascertained to exist in 27 per cent. of the cases, 17 per cent. (among the men 21 per cent.) were known to be of intemperate habits, and 29 per cent. had been under treatment for previous attacks. The number of patients admitted over 70 years of age was 31. Among the patients admitted were 22 boys, and it is pointed out that it would be "very desirable that some special accommodation should be provided for these cases, where they could be kept apart from the adult patients." The number of Jewish patients admitted was 69, the majority of them being Russians or Poles. In the previous year the number of Jewish patients admitted was 66. The number of patients discharged as recovered during the year was 245—viz., 70 males and 175 females, or 9·6 per cent. of the average number resident. "This is the highest recovery-rate of the last five years, and as regards female patients has only been exceeded on one occasion since the opening of the asylum." Of the 119 patients who were discharged unrecovered or removed, 25 were sent to the metropolitan district asylums, 72 were transferred to other asylums, two were removed to workhouses, and 19 were discharged to the care of their friends. The deaths during the year amounted to 240, or 109 males and 131 females, being at the rate of 9·4 per cent., of the average number resident. "This is a slightly higher rate than that of the last few years." Of the deaths four were due to influenza, three to renal disease, four to intestinal obstruction, one to enteric fever, nine to cancer, 10 to pneumonia, 12 to cardiac disease, 15 to colitis, 20 to mania and melancholia, 21 to senile decay, 23 to epilepsy, 23 to pulmonary phthisis, 32 to chronic cerebral disease, and 42 to general paralysis of the insane. Post-mortem examinations were made on 204 bodies. Inquests were held in three cases—viz., on a female patient who sustained an injury to the spine from the fall of the branch of an elm tree and died some months later, on a

male epileptic who died from asphyxia due to the impaction of a plum-stone in the trachea, and on a male patient who was assaulted by a fellow-patient and sustained fractures of several ribs and other injuries. The epidemics included colitis (in which 18 of the cases ended fatally), enteric fever (nine cases, two of which ended fatally), and influenza. The serious prevalence of phthisis and the risk of its spread among the asylum population are recognised, and the expediency of isolating tuberculous patients is pointed out. A profit of £1706 13s. is shown in the accounts of the farm, which is the highest ever recorded in the history of the asylum. Alterations in the wards have been made at a cost of £3025. The expenditure on repairs and alterations amounted to £10,537.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.

A QUARTERLY meeting of the Council of the College was held on Jan. 10th, Sir WILLIAM MAC CORMAC, Bart., K.C.V.O., the President, being in the chair.

The Council elected Mr. George Henry Makins a member of the Court of Examiners.

The Council removed from the list of Members a Member who had been found guilty of disgraceful conduct in a professional respect.

In reply to a request from the Honorary Secretary of the Scottish History and Archæology Committee of the Glasgow International Exhibition the Council left it to the President and the Vice-Presidents to decide as to which of the memorials illustrative of Hunter's life should be lent for the purposes of the exhibition.

A letter was read from the widow of Professor Albert, Honorary F.R.C.S. Eng., of Vienna, thanking the Council for their sympathy with her in the loss of her husband.

The PRESIDENT stated that he had received a letter from Dr. G. Mondan of 27, Rue Jarente, Lyons, stating that a committee had been formed to collect a fund for erecting a public monument to the late Professor Ollier, Honorary F.R.C.S. Eng., and inviting Fellows and Members of the College to subscribe.

A letter was read from the Registrar of the General Medical Council forwarding a copy of the resolutions and new rules in regard to public health diplomas adopted by the Council on Dec. 5th, 1900.—They were referred to the Committee of Management.

A letter was read from Mr. Thomas Bryant reporting the proceedings of the General Medical Council at their late session.—The thanks of the Council were given to Mr. Bryant for his services as the representative of the College on the General Medical Council.

Inasmuch as the Hunterian Oration is to be delivered on Feb. 14th the next meeting of the Council will be held on Feb. 7th.

Public Health and Poor Law.

LOCAL GOVERNMENT DEPARTMENT.

REPORTS OF INSPECTORS OF THE MEDICAL DEPARTMENT OF THE LOCAL GOVERNMENT BOARD.

On the General Sanitary Circumstances of the Stroud Rural and Nailsworth Urban Districts, and on Administration by the respective District Councils, by Dr. F. St. GEORGE MIVART.[1]—Stroud rural district surrounds the town of Stroud in Gloucestershire and comprises a large portion of the Cotswold hills and of the valleys which intersect them, the principal being the Chalford valley, at the mouth of which Stroud is situated. The population is large, somewhere about 30,000, consisting mainly of persons employed at numerous mills which have been established along the streams in this district. These are chiefly woollen and dying mills, dependent on the streams for water-power and for convenient disposal of trade refuse. Dr. Mivart describes the dwellings as usually substantial in structure, but in many places back-to-back houses, or, on the hillsides, "back-to-earth" houses are undesirably common. Action under the Housing of the Working Classes Act seemed needed in certain cases owing to extensive dilapidation and dampness. Notwithstanding the abundance of small streams and springs in the district, pure water-supplies are usually lacking. About one-fifth of the houses in the rural district are served by the Stroud Waterworks Company; elsewhere the supply is obtained, for individual dwellings or for small groups of houses, from wells, springs, and streams. The wells often receive directly the drainage of the surface of polluted soil above them, or for other causes the purity of their water is open to much suspicion. Natural springs, issuing from the lower oolites where these strata rest upon lias, are seldom impounded for local supplies, as they might easily be at trivial cost. On the contrary, they are allowed to run away as streamlets, the water of which is often utilised by villages only after it has been subject to divers opportunities of dangerous pollution. Evidently, as Dr. Mivart indicates, much good could be done by a local authority which would tackle the question of local water-supplies in a business-like spirit. Much greater difficulty attaches to dealing with the question of pollution of streams and rivers hereabouts. Contamination arises partly from sewage of villages, partly from houses on the banks of streams which frequently have closets built out over the water's edge, but mainly from manufacturing refuse. "Speaking generally, contaminating chemical matters are in such large quantity as to completely obscure the presence of sewage matter." So considerable are the accumulations due to manufacturing refuse which take place in the streams that their banks have annually to be "mudded"—that is to say, the mill-owners, individually or in combination, have to cleanse the banks by detaching the accumulated filth—a proceeding which creates a serious nuisance. The mill-owners maintain that unless they can discharge their untreated trade refuse into the water-courses "the closure of their mills would be inevitable." To require the manufacturer to return pure water to the stream might very probably mean imposing on him a heavier burden than he could bear. But that a great deal, short of perfection, can be done at a not ruinous cost, has been shown in Lancashire and Yorkshire in consequence of the action of river boards, and a reasonable minimum of preliminary treatment might, one would imagine, be exacted in Gloucestershire without much hardship. When we read that at every factory visited by Dr. Mivart the privies for workpeople were placed overhanging the streams, it would seem that here, at any rate, manufacturers might have saved themselves ultimate expense by the use of a little foresight. Pollution of this sort can hardly be represented as inevitable. Dr. Mivart notes that it is common in this district for urine to be stored in large tubs in the neighbourhood of dwellings and to sell it to cloth mills where it is used for soaking freshly-made cloth. He points to sundry matters, such as sewage disposal of villages and disposal of house refuse, which appear to be much in need of attention by the local authority. It is interesting to note that a method of disposal of excreta often adopted is to cast such matters into "lissens," or fissures in the Great Oolite strata, a practice sometimes clearly entailing risk to water-supplies. Cow-sheds in Stroud rural district appear to be kept in a particularly unwholesome and uncleanly condition. A variety of insanitary circumstances in the urban district of Nailsworth, which forms, as it were, an island in the Stroud rural district, are also detailed, and Dr. Mivart adds certain administrative recommendations in regard of both sanitary areas.

[1] London: Eyre and Spottiswoode, East Harding-street; Edinburgh: John Menzies and Co.; Dublin: Hodges, Figgis, and Co. Price 9d.

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

IN 33 of the largest English towns 6577 births and 4442 deaths were registered during the week ending Jan. 12th. The annual rate of mortality in these towns, which had been 16·1, 16·9, and 17·5 per 1000 in the three preceding weeks, had further risen to 19·6 per 1000 last week. In London the death-rate was also 19·6 per 1000, which was also the average rate in the 32 large provincial towns. The lowest death-rates in these towns were 12·8 in Huddersfield, 13·7 in Halifax, 13·8 in Derby, and 13·9 in Croydon; the highest rates were 22·7 in Nottingham, 22·8 in

Manchester, 24·9 in Liverpool, and 27·3 in Salford. The 4442 deaths in these towns last week included 389 which were referred to the principal zymotic diseases, against 351, 334, and 323 in the three preceding weeks; of these 110 resulted from whooping-cough, 81 from diphtheria, 66 from measles, 56 from diarrhœa, 41 from "fever" (principally enteric), and 35 from scarlet fever. The lowest death-rates from these diseases last week occurred in Wolverhampton, Halifax, Gateshead, and Newcastle, and the highest rates in Nottingham, Salford, Blackburn, and Preston. The greatest proportional mortality from measles occurred in Liverpool; from whooping-cough in Salford, Bristol, Nottingham, Birkenhead, and Preston; and from diarrhœa in Swansea and Blackburn. The mortality from scarlet fever and from "fever" showed no marked excess in any of the large towns last week. The 81 deaths from diphtheria included 25 in London, nine in Liverpool, eight in Sheffield, and six in West Ham. No fatal case of small-pox was registered last week in any of the 33 towns, and only one small-pox patient remained under treatment on Saturday last, Jan. 12th, in the Metropolitan Asylums Hospitals. The number of scarlet fever patients in these hospitals and in the London Fever Hospital at the end of the week was 2277, against 2535 and 2390 on the two preceding Saturdays; 156 new cases were admitted during the week, against 218, 167, and 163 in the three preceding weeks. The deaths referred to diseases of the respiratory organs in London, which had been 306, 325, and 330 in the three preceding weeks, further rose last week to 391, but were 338 below the corrected average weekly number. The causes of 63, or 1·4 per cent., of the deaths in the 33 towns last week were not certified either by a registered medical practitioner or by a coroner. All the causes of death were duly certified in West Ham, Nottingham, Salford, Bradford, and in 12 other smaller towns; the largest proportions of uncertified deaths were registered in Liverpool, Blackburn, Sheffield, and Gateshead.

HEALTH OF SCOTCH TOWNS.

The annual rate of mortality in the eight Scotch towns, which had been 20·6 and 19·2 per 1000 in the two preceding weeks, rose again to 21·9 during the week ending Jan. 12th, and showed an excess of 2·3 per 1000 over the death-rate during the same period in the 33 large English towns. The rates in the eight Scotch towns ranged from 16·3 in Paisley and 18·1 in Greenock to 22·6 in Glasgow and 30·3 in Perth. The 685 deaths in these towns included 49 which were referred to whooping-cough, 22 to diarrhœa, 12 to measles, eight to diphtheria, six to scarlet fever, two to small-pox, and two to "fever." In all, 101 deaths resulted from these principal zymotic diseases, against 87 and 76 in the two preceding weeks. These 101 deaths were equal to an annual rate of 3·2 per 1000, which was 1·5 above the mean rate last week from the same diseases in the 33 large English towns. The fatal cases of whooping-cough, which had been 33 and 29 in the two preceding weeks, rose again last week to 49, of which 36 occurred in Glasgow, six in Dundee, four in Edinburgh, and two in Greenock. The deaths from diarrhœa, which had been 15 18, and 22 in the three preceding weeks, were again 22 last week, and included 12 in Glasgow, four in Dundee, and four in Aberdeen. The fatal cases of measles, which had been 12 and 15 in the two preceding weeks, declined again last week to 12, of which five were registered in Edinburgh and five in Aberdeen. The deaths from diphtheria, which had been nine and three in the two preceding weeks, rose again to eight last week, and included four in Edinburgh, two in Glasgow and two in Aberdeen. The fatal cases of scarlet fever, which had declined from nine to two in the five preceding weeks, rose again last week to six, of which three were recorded in Glasgow, where the two deaths from small-pox and the two fatal cases of "fever" were also registered. The deaths referred to diseases of the respiratory organs in these towns, which had been 121 and 105 in the two preceding weeks, rose again last week to 123, but were 80 below the number in the corresponding period of last year. The causes of 25, or nearly 4 per cent., of the deaths in these eight towns last week were not certified.

HEALTH OF DUBLIN.

The death-rate in Dublin, which had been 21·5 and 29·4 per 1000 in the two preceding weeks, declined again to 28·3 during the week ending Jan. 12th. During the past four weeks the death-rate in the city has averaged 26·2 per 1000, the rate during the same period being 17·5 in London and 19·4 in Edinburgh. The 188 deaths belonging to Dublin registered during the week under notice were nine below the number recorded in the preceding week and included 18 which were referred to the principal zymotic diseases, against 12 and 23 in the two preceding weeks; of these, 10 resulted from whooping-cough, three from "fever," two from diphtheria, two from diarrhœa, and one from scarlet fever. These 18 deaths were equal to an annual rate of 2·7 per 1000, the zymotic death-rate during the same period being 1·5 in London and 2·4 in Edinburgh. The fatal cases of whooping-cough, which had been six, five, and 13 in the three preceding weeks, declined again to 10 last week. The deaths referred to "fever," which had been four, four, and three in the three preceding weeks, were again three last week. The two fatal cases of diphtheria showed a decline from the number in the preceding week. The 188 deaths in Dublin last week included 26 of children under one year of age and 59 of persons aged upwards of 60 years; the deaths of infants showed a marked decline, while those of elderly persons exceeded the number in the preceding week. Nine inquest cases and seven deaths from violence were registered during the week, and 56, or nearly a third, of the deaths occurred in public institutions. The causes of 10, or more than 5 per cent., of the deaths in the city last week were not certified.

THE SERVICES.

ROYAL NAVY MEDICAL SERVICE.

THE following appointments are notified:—Fleet Surgeons: H. L. Crocker to the *Royal Arthur* and to the *Blake*, and A. W. May to the *Britannia*. Surgeons: A. R. H. Skey to the *Royal Arthur*, additional, and to the *Blake*; N. L. Smith to the *Renown*; A. H. H. Vizard to Plymouth Hospital; R. T. A. Levinge to the *Boscawen*, for the *Agincourt*; and R. C. Munday to the *Cambridge*.

ROYAL ARMY MEDICAL CORPS.

Lieutenant-Colonel Sir James R. A. Clark Bart. (r.p.), is appointed to command the detachment of Militia Medical Staff Corps at Aldershot and also for duty at the Cambridge Hospital. Lieutenant Carr is appointed to the medical charge of troops at Ewshot Camp and Lieutenant Lauder to Deep Cut Camp, Frimley. Lieutenant E. Bennett goes to Longmoor and Borden Camps, Woolmer. Lieutenant J. E. Hodgson is posted to the Station Hospital, Western Heights, Dover. Colonel T. J. Gallwey, C.B., on return from active service in South Africa, has been reappointed to the medical charge of the Home District.

VOLUNTEER CORPS.

Artillery: 1st Fifeshire: Surgeon-Lieutenant J. C. G. Macnab to be Surgeon-Captain and to remain Supernumerary; Surgeon-Lieutenant A. Watson to be Surgeon-Captain. The Tynemouth (Western Division, Royal Garrison Artillery): Surgeon-Captain A. Duke resigns his commission. *Rifle:* 2nd Volunteer Battalion the King's (Liverpool Regiment): Surgeon-Major G. Westby to be Surgeon-Lieutenant-Colonel. 2nd Volunteer Battalion the East Yorkshire Regiment: Surgeon-Major A. T. Brand resigns his commission, with permission to retain his rank and to wear the uniform of the battalion on retirement. 1st Volunteer Battalion the Cheshire Regiment: Surgeon-Lieutenant J. B. Yeoman to be Surgeon-Captain.

TRANSVAAL WAR NOTES.

The hospital ship *Nubia* is returning to England with the following invalids on board: Civil Surgeons W. V. Eaves and H. C. Donald. Civil Surgeons C. Colin Campbell, S. L. Stephens, and W. Edwards are on their passage home in the same vessel.

Thirty-nine non-commissioned officers and men of the Royal Army Medical Corps have embarked at Southampton in the *Aroca* for South Africa.

The *Aurania* left for England on Jan. 8th, having on board Lieutenant-Colonel D. F. Franklin, R.A.M.C., Civil Surgeons B. J. Collingwood, D. L. Griffiths, W. G. Sutherland, L. T. Whelan, and F. Brinckwell.

Civil Surgeons J. G. Martin, A. W. Sanders, H. Hartley, N. E. Harding, and Major E. A. Burnside, R.A.M.C., have been discharged from hospital to duty.

Surgeon S. C. Godfrey, New Zealand M.I., has also been discharged to duty.

The members of the Ambulance Brigade attached to the Northampton Centre were entertained at a banquet at the Town Hall, Northampton, on Jan. 12th. Messages from the Queen and the Prince of Wales, congratulating the county of Northampton upon having furnished a large contingent for voluntary service of mercy in South Africa, were read.

THE ROYAL ARMY MEDICAL CORPS IN THE FIELD.

At the Garrison Gymnasium, Devonport, on Jan. 8th, Surgeon-General G. H. J. Evatt, principal medical officer of the Western District, in the presence of a large number of officers and non-commissioned officers, delivered an interesting lecture on the Organisation of the Royal Army Medical Corps in the Field. General Evatt said that a large amount of aid was wanted to make the Royal Army Medical Corps fit for the field, and the medical service was still very short-handed. He also stated that there was not a medical company of volunteers in the Western District, and he wanted a number of men to come forward from Plymouth and Devonport to form a volunteer company. At the conclusion of the lecture, on the motion of Colonel W. Clarke, a vote of thanks to General Evatt was unanimously passed.

THE BEARER DETACHMENT OF THE 2ND VOLUNTEER BATTALION (MANCHESTER REGIMENT).

The first annual dinner of the bearer detachment of the 2nd Volunteer Battalion (Manchester Regiment) was held in Manchester on Jan. 12th. Surgeon-Major G. H. Darwin presided, and among those present were Surgeon-Captain Westmacott, Surgeon-Lieutenant J. Ratcliff-Gaylard, and Dr. T. C. Railton. During the evening Surgeon-Major Darwin said that he ventured to think that they were on the eve of great changes in the medical as well as in the combatant services. He would make it compulsory for every combatant to pass through a course of ambulance duty, as being useful not only to the battalion, but also to themselves in time of need. A great deal had been done during the last 50 years in England in developing an ambulance system, and this had been further developed by the great service of the St. John Ambulance Association, which had sent upwards of 2000 men to the present war. The Volunteers had never abolished the old regimental system. After many years of struggling to make their bearer detachment a success he was prepared to advocate one of two things, either that they should have a separate medical staff company to each battalion, or that they should have a portion of the already formed Medical Staff Corps allotted to each battalion for practical purposes.

THE FEVER STATISTICS OF WAR.

On the occasion of the third anniversary dinner given at the Caledonian Club to General Ian Hamilton and other officers returned from South Africa, the Director-General of the Army Medical Service, made some remarks in connexion with the subject of the prevalence of enteric fever in modern warfare. Surgeon-General Jameson said that he owed the honour paid him that evening to the fact that he had the good fortune to hail from beyond the Tweed and to the further fact that he represented a department in the army burdened with many responsibilities. In every war during our own time the mortality from disease had been much greater than that from shot and shell. In the French war in Madagascar the mortality from disease was 32·2 per cent., while the mortality from wounds was *nil*. In Cuba the mortality from disease in 15 months was 40 per cent., irrespectively of the number sent home. Unfortunately, we had lost a great many men from disease in South Africa and the mortality from that cause was foreseen before the war. Of every 100 cases admitted to hospital in Ladysmith and Maritzburg during the year before the war 5½ per cent. were enteric cases. Inoculation was a great preventative and a man who had not been inoculated was more liable by six times to an attack of enteric fever than a man who had been inoculated. During the Franco-German war, while the Germans were surrounding Metz the mortality from enteric fever was nearly three times as great as in South Africa.

A SPECIAL CORRESPONDENT ON THE DEATH OF CIVIL SURGEON F. G. ENGELBACH.

In a graphic account of the Nooitgedacht reverse, after noticing the death in the hottest of the fight of Sergeant Read of the Scottish Rifles, attached to the Mounted Infantry, in circumstances of typical bravery, the special correspondent of the *Standard* gives the particulars of the case of Surgeon Engelbach in the following words: "The death of Surgeon Engelbach of the Yeomanry Hospital was also a typically brave one. Tending the wounded under heavy fire he was shot through the palm of the left hand and had just made a grim joke about now being handicapped in his work when in standing up to dress his wound he was killed by a bullet through the forehead."

HOSPITAL STOPPAGES.

The *Army and Navy Gazette* of Jan. 12th says that it is glad to learn that the question of hospital stoppages has again been under consideration, and that this time the War Office has been in a position to obtain justice for the soldier. The Treasury has been induced, owing to strong representations, our contemporary is informed, to amend the regulations on the subject to the extent of allowing power to general officers commanding districts to remit the whole of the stoppages due from soldiers under treatment for injuries received in the actual discharge of their military duties. This concession will be fully appreciated, and at the present moment seems particularly opportune.

HEALTH OF THE CHATHAM GARRISON.

Some important communications have recently passed between Vice-Admiral Sir William R. Kennedy, Commander-in-Chief at the Nore, and Major-General Sir Thomas Fraser, commanding the Thames district, with reference to the large number of cases of disease contracted by the men of the fleet and garrison at Chatham. A copy of the correspondence has been forwarded by the admiral to the Chatham Corporation who were asked if they could not take some steps in the matter. The corporation have referred the subject to a committee.

ASSASSINATION OF A MEDICAL OFFICER.

With reference to the murder of Captain Dudley Johnston, I.M.S., which we mentioned last week, a telegram from the correspondent of the *Times* at Lahore dated Jan. 12th states that the fanatic lay in wait at the entrance of the bazaar armed with a sword and a dagger to kill the first European he saw. On the entry of Captain Johnston the Ghazi rushed at him and stabbed him to death. The murderer then ran through the bazaar, but was pluckily caught by the bazaar jemadar. He was promptly tried and hanged.

THE VICTORIA CROSS.

The Queen has signified her intention of conferring the Victoria Cross upon Lieutenant E. T. Inkson, R.A.M.C., who on Feb. 24th, 1900, carried Second-Lieutenant Devenish (who was severely wounded and unable to walk) for three or four hundred yards under a very heavy fire to a place of safety. The ground over which Lieutenant Inkson had to move was much exposed, there being no cover available.

THE REPORT OF THE ROYAL COMMISSION ON THE SOUTH AFRICAN HOSPITALS.

Sir William Church, speaking at University College Colston Society dinner at Bristol on Jan. 15th, said that the report of the Royal Commission into the South African Hospitals had been completed and signed, and now only awaited acceptance by the Queen in order to be made public.

THE CRISIS IN CHINA.

The American hospital ship *Maine* has discharged at Southampton four officers and 138 rank and file patients. With the exception of 34 taken on board at Malta the invalids were from China. All the patients are now at Netley.

DEATHS IN THE SERVICES.

Surgeon-Lieutenant-Colonel Saunders Barton Haliday, I.M.S. (retired), in his fifty-eighth year, at his residence, Thicket-road, Anerley. He served in the Abyssinian war of 1867-68 (medal) and also in the Afghan war, 1878-79 (medal).

Major W. Babtie, V.C., R.A.M.C., the medical hero of Colenso, has just received the freedom of the Borough of Dumbarton.

THE Borough Council of Battersea have decided to borrow £985 for the purpose of erecting a post-mortem room, £2723 for a coroner's court, and £8825 towards providing new baths and washhouses.

Correspondence.

"Audi alteram partem."

"THE X RAYS IN SOUTH AFRICA."

To the Editors of THE LANCET.

SIRS,—As Mr. Hall-Edwards's paper on the above subject in THE LANCET of Jan. 12th is calculated to convey a wrong impression as to the steps taken by the War Office for the carrying out of x-ray work during the war I trust you will permit me to endeavour to correct it. During the three years previously to October, 1899, when I went to South Africa, I instructed all the young officers who passed through Netley in radiography and the methods of localisation of foreign bodies by this means, and the large majority of these officers I know to be capable of doing the work efficiently. Originally the intention of the War Office authorities was that x-ray work should be done by them, but it soon became evident that medical officers could not be spared for this important duty, as to make anything of it they had practically to devote all their time to it. The Surgeon-General of the Army, therefore, wired home recommending that experts in radiography should be sent out, and this was done. That these gentlemen were experts (without the note of interrogation which Mr. Hall Edwards so frequently places after the word in his paper) is proved by the work they did during the war. I saw a large number of localisations accurately done by them, and I brought home with me an enormous number of negatives and prints of excellent quality taken by them which I hope I may be permitted to publish at some future time. Many of these skiagrams were taken for the localisation of bullets in the most difficult parts of the body—the head, chest, and pelvis—and were well done.

As regards the provision for x-ray work made by the War Office for the army in South Africa, every base and general hospital, each hospital ship, and some of the small stationary hospitals on the lines of communication took with them the army pattern x-ray apparatus made by Apps and Newton, which includes Mr. Mackenzie Davidson's localiser and an ample supply of plates and all other photographic materials. Care was taken that one or more of the officers already referred to as being familiar with x-ray work should form part of the *personnel* of these units on leaving England; but, as stated above, their services in this department had to be dispensed with. That Mr. Hall-Edwards succeeded where some of our experts failed is probable enough, but this fact hardly warrants him in so criticising the medical department of the War Office as to lead your readers to suppose that it took no interest in so important a modern surgical procedure as radiography and that it provided for its performance in the present campaign in but a very imperfect manner.

The x-ray department which Mr. Hall-Edwards recommends for the army is (and has been for some years) in existence here, and the methods of localisation and radiography are already being properly taught. The apparatus used here, as well as that sent to South Africa, had the approval of Mr. Mackenzie Davidson, a strong evidence for its correctness and completeness, as no surgeon or electrician has done as much as he has for the improvement and development of x-ray procedures. The present campaign is not the only one in which x-ray work has been done by officers of the Royal Army Medical Corps, as good results were also obtained in the last Soudan war. No one in these days is likely to neglect the advantages of radiography, and least of all the medical department of the War Office.—I am, Sirs, yours faithfully,

W. F. STEVENSON,
Colonel R.A.M.C.; Professor of Surgery, Army Medical School, Netley, Jan. 14th, 1901.

"THE TEACHING OF ANÆSTHETICS."

To the Editors of THE LANCET.

SIRS,—It seems to me very undesirable that the important question of making anæsthetics a recognised part of the medical curriculum should at its present stage be hampered by side issues such as those which form the real essence of Lieutenant-Colonel Lawrie's letter in THE LANCET of Jan. 5th, p. 64. The point before the profession is whether the student should or should not be compelled to attend a course of instruction in the use of anæsthetics—not whether this or that anæsthetic should be chosen for routine use, or this or that system of anæsthetisation adopted. Up to the present time I have taken no part in the discussion which you, Sirs, by your leading article have so happily initiated, for I have been hoping that some prominent members of the profession would interest themselves in the movement and set the ball rolling by bringing their influence to bear upon the General Medical Council and examining bodies. I need hardly say, however, that the matter has my fullest sympathies. It is to my mind an extraordinary fact that at the commencement of the twentieth century it is possible for a medical man to enter practice without ever having attended a course of instruction in anæsthetics or handled an ether or chloroform inhaler. Surely the public ought to be protected against the risks attendant upon such a state of affairs. Pending the settlement of this question it is certainly a pity that Colonel Lawrie should, under the guise of supporting the movement, again stir up the muddy waters of the chloroform controversy; and were it not that the statements which he makes are likely to mislead the uninitiated they would certainly be most appropriately treated by the silence they deserve.

Colonel Lawrie attacks the present teaching of English anæsthetists and again urges the claims of chloroform. His letter is certainly not characterised by moderation in language. He is, naturally enough, disappointed at the verdict expressed by the scientific world upon the work of the Hyderabad Commission and his infelicitous strictures are perhaps excusable. But those of us who have spent the best part of our lives in the special study and practice of anæsthetics have a distinct duty to perform to the younger members of the profession when we see in print such misleading assertions as those contained in Colonel Lawrie's letter. The chloroform problem has, in fact, been solved both clinically and experimentally. Whilst there are numerous circumstances under which this anæsthetic is unquestionably preferable to all others, whilst skill in its administration almost abolishes its risks, whilst it is free from many of the disadvantages and even dangers of ether, the broad fact remains, that in the hands of *the average medical man* the last-named anæsthetic is less likely to destroy life than chloroform. It is for this reason that the London anæsthetists very properly advise those whom they instruct to select ether in preference to chloroform for the ordinary run of surgical cases. The margin of safety with this anæsthetic is a wide one—a point of great importance when we bear in mind the fact that the surgeon of to-day expects his patients to be kept, not, as Colonel Lawrie apparently keeps his patients, *moderately* anæsthetised, but profoundly narcotised—i.e., *beyond the point at which corneal reflex disappears*. Had we to instruct men who, like Colonel Lawrie, possess a special aptitude for anæsthetising, who are destined to practise under climatic conditions similar to those of Hyderabad, who when in practice will only have to assist surgeons with somewhat antiquated ideas as to what is meant by "anæsthesia," and who would be content to become and to be treated as mere dispensers under the "supreme command" of the surgeon—it is quite conceivable that some slight modification in the present teaching might be expedient. But most of the men passing through the hands of those who, under the present inadequate support of authority, do their best to instruct students are not thus specially gifted. Nor are they, as a rule, men who are about to enter practice in sunny Hyderabad. A large proportion of them, indeed, go into country practice in England, and possibly into cold and low-lying districts where the atmospheric conditions are not the most favourable for anæsthetising. Then, again, they are men who see in their hospital experience *true* surgical anæsthesia and who know that when they enter practice they themselves will be expected to produce for the surgeons whom they may meet a similarly profound state of insensibility. And lastly, they are men who, thanks to the courtesy of English surgeons, will be allowed a perfectly free hand in the choice and administration of the agent employed.

It is the duty of an instructor in anæsthetics primarily to consider the safety of the public, and in the discharge of this duty he is, I submit, bound to advise his students to employ that anæsthetic which, so far as available evidence goes, is least likely to destroy life. He must put aside convenience, simplicity, and personal bias.

Now what record has chloroform? I cannot within the compass of this letter even summarise the evidence against this anæsthetic, but it is perfectly conclusive. I may, however, refer to a somewhat interesting incident bearing upon the supposed safety of chloroform in the country north of the Tweed. A few years ago I had the honour to receive a deputation from an important Scotch hospital in which, so far as my memory serves me, no less than nine chloroform accidents had occurred in one year. I was asked to express an opinion as to the best form of ether inhaler. Colonel Lawrie would encourage the use of chloroform even for tooth extraction. But what is the record of this anæsthetic in dental surgery? Some years ago I thoroughly investigated this point, and I laid my results, in the form of a paper, before the British Dental Association. Curiously enough the annual meeting of this body was that year held in Edinburgh, and the facts and figures which I there brought forward were not disputed. I found that in 15 years (1880–1894 inclusive) no less than 37 deaths had been recorded as having occurred in Great Britain in connexion with anæsthesia for dental operations. Of these, 14 occurred in Scotland (12 chloroform deaths); 21 in England and Wales, excluding London (15 chloroform deaths); and two in London (no chloroform deaths). Now, according to the Census returns (average between 1881 and 1891) the population of Scotland was roughly 4,000,000; that of England and Wales (excluding London) was 23,250,000; and that of London was 4,250,000. From this it follows that during the 15 years ending 1894 the dental anæsthetic death-rate in Scotland was more than four times as great as that in England and Wales, and about seven times as great as that in London. Had the rate in England and Wales been the same as in Scotland there would have been at our doors about 96 fatalities during this period; whereas, as my figures show, there were only 23. The explanation is obvious: it is that the Scotch death-rate was due to the use of chloroform. In London, where this anæsthetic is rarely if ever used in dental practice, the ratio of deaths to population was extremely small; in England and Wales (excluding London) where chloroform is used, but not to the extent which obtains in Scotland, the ratio was considerably higher; and in Scotland itself, where chloroform is the routine anæsthetic—at all events for all major dental operations—the ratio was very much higher. And yet, with facts and figures such as these we find Colonel Lawrie still endeavouring to inculcate a disregard for the risks of chloroform If it were necessary further to strengthen the above results one might add that it is quite possible, if not probable, that many more deaths than those of which I was able to find records actually took place in Scotland during the 15 years referred to, for there are, as is well known, no coroners' inquests in Scotland, so that chloroform accidents often escape notice.

I am, Sirs, yours faithfully,

Queen Anne-street, W., Jan. 14th, 1901. FREDERIC HEWITT.

WEAK POINTS IN THE EXAMINATION SYSTEM.

To the Editors of THE LANCET.

SIRS,—There can be little doubt among those who have had much experience in teaching and examining medical students that in a small percentage of cases at examinations the candidate's fitness to pass is not fully appreciated. There can, I think, be less doubt that the teacher is able to gauge a student's capabilities and knowledge more accurately than an examiner can, and yet, under the present system of medical examination, no use is made of the information which teachers could so easily give. Every examiner must remember cases in which a candidate has almost deserved the minimum mark to pass, and the doubt has arisen as to whether he is a hard-working man who has failed to do himself justice or one who has crammed up just sufficient transitory knowledge to get near the pass limit. In my opinion it would be a great assistance to examiners in their attempts to be absolutely fair if teachers were invited to send in a confidential report of the industry and capacity of each student. These reports need be used in doubtful cases only, and their existence would tend to make men try to win their teacher's good opinion by steady systematic work rather than to get up a certain part of their subject from books and trust to luck that the examiner may not pitch upon the part of which they are ignorant. Teachers may, I think, be trusted to act honourably by the examining boards. They are the people from whom examiners are drawn and during the time of their examinership implicit faith is reposed in them, although their opportunities of giving an unfair advantage to their own students are very great. If any of my fellow teachers will spare time to discuss this matter I think good will come of it, for as a teacher I know that medical examinations, though fair enough on the whole, are capable of some little improvement.

I am, Sirs, yours faithfully,

F. G. PARSONS.

Anatomical Department, St. Thomas's Hospital
Jan. 14th, 1901.

"ARSENIC AND AERATED WATERS."

To the Editors of THE LANCET.

SIRS,—Dr. Bampton has raised a most important point in reference to the preparation of mineral waters from the action of sulphuric acid containing compounds of arsenium and derived from arsenical pyrites. The impure acid, it is interesting to note, may be used with impunity if certain conditions do not arise. The reaction occurring between arsenical vitriol and a carbonate of calcium or sodium in a leaden generator may be expressed by the simple formula—

(1) $CaCO_3 + H_2SO_4 = CaSO_4 + H_2O + CO_2$ (gas),

the arsenical compounds, so far as manufacturing purposes are concerned, remaining latent and harmless. If, however, a scrap of iron, such as a nail or a portion of zinc, finds its way into the generating vessel the organism is converted into the guise of the death-dealing gas "arsine" (AsH_3), which is pumped with the carbon dioxide into the cylinder and is taken thence under high pressure (from 120 to 180 pounds) on the square inch and forced into bottles or syphons. The chemical changes that occur may be expressed as follows:—

(1) $3Fe + 3H_2SO_4 = 3FeSO_4 + 3H_2$
(2) $3H_2 + H_3AsO_3 = 3H_2O + AsH_3$ (gas).

In this reaction the nascent hydrogen produced by the action of the "sulphuric acid" upon the "iron" reduces the "arsenious acid" to the condition of arsine (AsH_3) (gas). It is unnecessary for me to point out what terrible effects such a catastrophe would produce and the warning that all those who are concerned in the manufacture of mineral waters should take to avoid the use of any vitriol not guaranteed free from arsenical compounds in their processes.

I am, Sirs, yours faithfully,

NINIAN MCI. FALKINER, M.D. Dub.

Dublin, Jan. 9th, 1901.

*** The arsenical contamination of aerated waters in the way suggested by our correspondent is, we think, a remote probability. The carbonic acid gas contained in steel tubes is not usually prepared from acid and whiting. Most manufacturers test the purity of the gas by exposing it to potash solution. Pure CO_2 would be completely absorbed but not hydrogen or arseniuretted hydrogen. Lastly, aeration is very unsatisfactory when insoluble gaseous impurities are present.—ED. L.

"LET US NOW PRAISE FAMOUS MEN."

To the Editors of THE LANCET.

SIRS,—Your eloquent appeal in a leading article last week contains incidentally a pathetic reference to the grave of Sir Thomas Browne; the well-known passage beginning, "There is nothing strictly immortal but immortality," may, perhaps, not unfittingly be recalled to the memories of your readers. I subjoin the lines referred to.

I am, Sirs, yours faithfully,

Worthing, Jan. 13th, 1901. GEORGE PINDER.

SIR THOMAS BROWNE, *Hydriotaphia, Chap. V.*

There is nothing strictly immortal but immortality. Whatever hath no beginning, may be confident of no end; which is the peculiar of that necessary essence that cannot destroy itself; and the highest strain of omnipotency, to be so powerfully constituted as not to suffer even from the power of itself: all others have a dependent being and within the reach of destruction. But the sufficiency of Christian immortality frustrates all earthly glory, and the quality of either state after death makes a folly of posthumous memory. God who can only destroy our souls, and hath assured our resurrection, either of our bodies or names, hath directly promised no duration. Wherein there is so much of chance that the boldest expectants have found

unhappy frustration: and to hold long subsistence seems but a scape in oblivion. But man is a noble animal, splendid in ashes, and pompous in the grave, solemnising nativities and deaths with equal lustre, nor omitting ceremonies of bravery in the infamy of his nature.

To the Editors of THE LANCET.

SIRS,—In September last I sent to the meeting of the British Association at Bradford a paper prefaced with the following remarks: "This year being the tercentenary of the publication of Dr. Gilbert's celebrated work 'De Magnete,' in which he announced in the year 1600 that the earth was a magnet, but from which time till now the cause of its magnetism has remained a mystery, the present meeting of the British Association would appear to be a very appropriate occasion for commemorating that event and for suggesting an explanation of the cause which is not at variance with known electrical and meteorological laws, since no reasonable explanation or one that is proof against scientific criticism has yet been offered." My paper arrived late—three days after the British Association had commenced its proceedings, but I was pleased to see that Professor S. P. Thompson lectured at the London Institution at the end of last year on "A Tercentenary of Electricity," and it is with still greater pleasure that I now learn in your columns that the medical profession at Colchester, Gilbert's native place, have combined to erect a marble statue of the famous physician and scientist. I trust a much larger sum will be subscribed than the one mentioned as being actually wanted. I have much pleasure in seconding your appeal and in forwarding to the treasurer my humble contribution.

I am, Sirs, yours faithfully,

Jan. 15th, 1901. FREDERICK GEORGE, M.D. St. And.

THE PROPOSED NEW MUNICIPAL BUILDINGS, ETC., AT BOURNEMOUTH.

To the Editors of THE LANCET.

SIRS,—As a member of the Municipal Buildings Committee of the Bournemouth Town Council, my attention has been called to a communication appearing in THE LANCET of Jan. 12th, p. 116, under the heading of "When is an Improvement not an Improvement," in which the writer has made many inaccurate statements calculated to do this unique health resort considerable harm. I cannot do better than enclose the "statement of facts," which will sufficiently refute such misunderstandings.

As a medical man who has known the town for more than 17 years I shall hail with satisfaction the time when this open space in question is properly drained and laid out as beautiful and healthy pleasure grounds, in place of being a semi-swamp in parts and a possible receptacle for things of an objectionable nature. Instead of putting the ratepayers to an unnecessary expense in refuting misstatements it would be far more to the purpose if these objectors would direct their energies towards strong advocation of more shelters and more seats throughout the town, and the erection of that much-needed pier pavilion, all of which would prove inestimable boons to the invalid visitors to this town and enormously strengthen our hands in the treatment of chest cases and many other forms of disease. The lack of the above is the one crying need of Bournemouth, for it is often a difficulty to encourage patients to go outside their houses to take fresh air unless there is adequate provision for shelter from sudden atmospheric changes. Fortunately, there are signs that we are waking up to this necessity, and medical men can hasten it by making their voices heard in the matter.

I am, Sirs, yours faithfully,

Bournemouth, Jan. 14th, 1901. F. W. CORY.

FENCING AS A THERAPEUTIC MEASURE.

To the Editors of THE LANCET.

SIRS,—I venture to suggest to the profession that the exercise of fencing is not sufficiently used as a remedy in many of the incipient neuroses of adolescence. And my suggestion would involve its adoption more particularly in the case of young girls. As an old student of the foils I am sure that no other pastime open to both sexes can compare with it as a natural diaphoretic, as a training for the brain, the eye, the nervous and muscular systems, and if the proper dress (or undress) be adopted (in girls) the perfect freedom of such costume may be elevated into a future habit which even may discard the "exigencies" (so harmful) of society clothes in their extreme and usual manifestations. In my own practice I have, I am glad to say, never neglected the "prescribing" of the foils, but I am half-sure and half-afraid that it is an omitted recommendation with the profession at large.

I am, Sirs, yours faithfully,

GEORGE H. R. DABBS, M.D. Aberd.

Shanklin, I.W., Jan. 14th 1901.

THE PHARMACEUTICAL SOCIETY AND DOCTORS' SHOPS.

To the Editors of THE LANCET.

SIRS,—We have just seen the article upon "The Employment of Unqualified Dispensers" in THE LANCET of Jan. 5th. There is in the article an error in fact which we think should be pointed out—viz., the writer says: "The Pharmaceutical Society had instigated no less than 46 prosecutions of unqualified druggists' assistants." This is not so. The 46 prosecutions in question were all against doctors' unqualified assistants for selling poison in shops belonging to doctors, and in each case a conviction was secured. We think this correction gives additional weight to the views of the article.—We are, Sirs, yours faithfully,

P. MORISON AND SON,

Solicitors to the Pharmaceutical Society in Scotland.

Edinburgh, Jan. 12th, 1901.

"ISOLATION HOSPITALS."

To the Editors of THE LANCET.

SIRS,—As medical officer to the Hospital for Infectious Diseases at Bishop's Stortford, will you kindly allow me a few lines of explanation regarding the statements which appeared in THE LANCET of Jan. 5th (p. 64), in a letter signed by Mr. Edgar Pittway? I wish to confine myself purely to matters of fact. The two children, W. N—— and A. F——, referred to in Mr. Pittway's letter were discharged from the hospital on Dec. 16th. Both children were quite free from any discharges from either the eyes, ears, or nose, as ascertained by myself. Desquamation in the case of W. N—— was completed. A. F——, at the end of nearly the seventh week had not desquamated at all. M. F——, a sister of A. F——, was admitted to the hospital on Dec. 25th, nine days after her sister had returned home. She was then desquamating freely all over the body. M. N——, a brother of W. N— , was admitted to the hospital on Dec. 27th also desquamating generally. As he was desquamating freely on his hands the process of desquamation was obviously of some standing.

With these facts before me I cannot agree with Mr. Pittway's conclusion that the "return" cases were the cause of the second outbreak of scarlet fever at Henham.

I am, Sirs, yours faithfully,

Bishop's Stortford, Jan. 16th, 1901. E. D. AGNEW.

THE COUNCIL OF THE ROYAL COLLEGE OF SURGEONS OF ENGLAND.

To the Editors of THE LANCET.

SIRS,—It would be most interesting to have an answer to the question—"What is the object of the annual meeting of the Fellows and Members of the Royal College of Surgeons of England?" We are advised by advertisement that a meeting will be held and we are *invited* to attend. Some of us do so at expense and inconvenience to ourselves, when a voluminous report is placed in our hands which we have never seen before, and consequently we have never had any opportunity to acquire the slightest knowledge of its accuracy or contents, whereas the Council have, or should have, a complete mastery of the same and a defence of any weak spots which may be detected at the meeting. This has at last been remedied by the strenuous efforts mainly of the members. Certain proposals are put forward at the meeting and are put to the vote, and as often as not these proposals are carried *nem. con.*, but at the next meeting of the Council our unanimous vote is tabooed and the very opposite is carried by the Council.

Now if I found that any other society, scientific, social, or

commercial, treated my vote in such a manner I should at once withdraw my name as a member and regard the matter as a personal indignity. But in a case where I have given many years of my life in order to get an insight and knowledge of surgery so as to obtain my daily bread I am compelled to put up with the treatment. If I resign my membership I resign that which enables me to gain an honest livelihood. Is this fair? Is it just?

There is one other question I should like to ask. Since a somewhat peculiar circular some time ago was sent out to the Fellows of the College, asking for their opinion as to the advisability of granting some measure of the franchise to the Members, and a certain number of the Fellows voted in the affirmative, I should like to know by whom the names of the recently elected Fellows were selected, and what percentage of the Fellows voted for those names, and also for the recent Act of Parliament which was obtained in order to enable the Council of the College to do that which previously they were unable to do. It is my firm belief that if some of these newly-elected Fellows were fully aware of the fact that not one of the 17,000 Members had any voice or vote in their selection and election they would at once return their diplomas.—I am, Sirs, yours faithfully,

ALBERT S. MORTON, M.D. Durh.

Putney, S.W., Jan. 9th, 1901.

NOTES FROM INDIA.

(FROM OUR SPECIAL CORRESPONDENT.)

Refusal by a Judge of a Medical Certificate and Contempt of Court.—The Appointment to the Victoria Dufferin Hospital in Calcutta.—The Plague Epidemic.

A CURIOUS incident is reported from Colombo. The account which is current is to the effect that Sir W. Bonser, the chief justice, has issued a rule calling on Captain J. B. Reddick, R.A.M.C., to show cause why he should not be committed to prison or otherwise punished for contempt of court. Captain Reddick gave a medical certificate to a Major Pain, who had been summoned to serve on a jury, stating that the major was not well enough to serve. The chief justice, it appears, took exception to the certificate and refused to accept it on the ground that the nature of the illness was not stated on it, and he laid down the dictum that it was for the court to decide whether the statements in the certificate were sufficient to entitle the holder thereof to exemption. The certificate was thereupon rejected. When Captain Reddick discovered this it is reported that he addressed a letter to the chief justice expressing his surprise at the course of action adopted, demanding an apology, and threatening on failure of a sufficient apology being made to represent the chief justice's conduct to the Imperial authorities. On receipt of this letter, it is said, the chief justice ordered the rule *nisi* to issue.

I understand that Miss Margaret M. T. Christie, M.D. Lond., has been selected for the permanent charge of the Victoria Dufferin Hospital in Calcutta. Amongst lady doctors this appears to be a much-coveted appointment and the competition for the post is said to have been very keen. Miss Christie was one of the lady doctors sent out in 1898 for plague duty and she was posted to Calcutta. The outbreak of that year being so mild there was little opportunity of studying plague, but Miss Christie took an active part in pushing the value of inoculation and in association with Mr. Nield Cook, the health officer, she succeeded in performing over 2000 inoculations The city at that time was greatly alarmed about the plague and the authorities had made great preparations against it. Amongst other duties Miss Christie acted as lady superintendent to the staff of European nurses who had been imported into Calcutta in the event of emergencies. Miss Christie will take up her new post in February.

About the plague epidemic there is little to record this week. There are distinct indications of its development once more in Bombay city. In three of the old infected districts—Mandvi, Bhuleshwar, and Byculla—the signs of recrudescence are marked and there are more patients in the hospitals under treatment for plague. The plague mortality in the Behar district of Bengal is very large. Captain A. Gwyther, I.M.S., has been placed there on special duty. It is a good sign that the people are coming forward asking to be inoculated, as except for this, disinfection alone is relied on and is being pushed extensively. It is said that an experienced assistant civil surgeon has been sent as health officer to Patna. In Bangalore there appears to be some friction about the plague regulations and the disease is spreading. There is no definite sign of recrudescence at present in Calcutta, but the general mortality is abnormally high. Sporadic cases still keep cropping up in the villages of the Jullunder district of the Punjab.

Dec. 29th.

BIRMINGHAM.

(FROM OUR OWN CORRESPONDENT.)

Christmas Festivities.

THE return of Christmas brings a renewal of the efforts to make glad the season among all the sick and poor. The various hospitals in the city have vied with each other in promoting the happiness and comfort of the inmates, and in providing entertainments and amusements which tend to take their thoughts away from their maladies for the time being. In the Christmastide which has just gone by the General Hospital was especially prominent in this direction, the internal decorations being tastefully and artistically arranged, and the colours and festoons giving an attractive appearance to the wards and rendering them bright and cheerful-looking. There were entertainments in the form of plays by the resident officers, tableaux and concerts among the sisters and nurses, and, not the least enjoyable, an "at home" by the matron—Miss Jones—which was largely attended and much appreciated. While it is no doubt a successful way of brightening the lives of many of the patients it must not be forgotten that all the preparations and participations in such festivities entail an extra amount of work and longer hours, of time and labour drawn from the more serious duties of everyday routine; the more credit, therefore, is due to those whose sympathy and disinterestedness render them willing and anxious to smooth the lives of those whom accident and disease have thrown into such admirable and comfortable quarters during the season of Christmas-time.

Death of Sir John Jaffray.

On Jan. 4th Sir John Jaffray, the first baronet, passed peaceably away to his rest. At the ripe age of 82 years Sir John Jaffray completed a long and active life, of which a great part was spent in the public service of the town of his adoption. Born at Stirling in 1818, he became a reporter for a newspaper after his education at Glasgow, and in 1844 obtained an appointment upon the *Birmingham Journal*. Here, after an interval in which he displayed rare energy, literary ability, and business capacities, he was taken into partnership at the formation of the *Daily Post*, a position which he held with increasing success and advancement. Of liberal principles and pronounced views on important public and social questions, he was always ready with fearless advocacy to expound his ideas for the guidance of the public opinion of the city and the welfare of those among whom he lived and laboured so earnestly. Generous in relation to medical charities and philanthropic institutions, he built in 1885 the suburban hospital known by the name of its founder, the Jaffray Hospital, where the patients who pass from the General Hospital remain until they are able to be removed or to resume their work. In all matters of medical interest he took a prominent part, more particularly at the General Hospital and the Hospital for Women. Of astute business habits and profound commercial knowledge he acquired distinctions and honours which rarely fall to the lot of those who cut their way through obstacles and difficulties, achieving thus a merited and distinguished position in the community which he so long and so actively adorned.

Periodical Collections for Local Charities.

The complete list of the collections for the past year shows a substantial amount for the various charities of the city. The total reaches the sum of £5262 17*s.* 9*d.* In spite of war funds and numbers of minor drains upon benevolence there will be from this source a gratifying addition to the respective funds of the hospitals in the city.

Medical Appointments.

At a meeting of the board of management of the General Hospital on Jan. 4th two new offices were created and appointments made. It has long been a source of difficulty

in dealing with the large number of medical out-patients, and after consideration it was resolved to appoint two casualty assistant physicians. For these offices there were six candidates, the choice falling upon Dr. J. R. Charles and Dr. S. H. Perry, each of whom had held the post of resident medical officer for a lengthened period.

Jan. 15th.

LIVERPOOL.

(FROM OUR OWN CORRESPONDENT.)

The Lord Mayor's Hospitals Century Fund: the Hospital Sunday Collection.

THE twentieth century has opened auspiciously for the medical charities of Liverpool. The fund which the Lord Mayor has inaugurated for the liquidation of the debts of the hospitals is proceeding most satisfactorily, nearly £9000 having been already subscribed towards that object, the total amount required being £22,000. The collections made on Sunday, Jan. 13th, in the various churches and chapels throughout the city and suburbs on behalf of the Hospital Sunday Fund promise to exceed those of last year by a substantial amount. The returns from the various places of worship which have already been published show, in many instances, marked improvement upon last year's figures. The total amount collected will not be fully known for 10 days or a fortnight.

Arsenical Beer in Liverpool and Crewe.

The quarterly report of the public analyst (Dr. Campbell Brown) submitted at the last meeting of the Liverpool Health Committee, stated that out of 293 samples of beer analysed, 52 were found to constitute offences against the Food and Drugs Act. 25 samples contained a trace of arsenic, 20 samples contained a small quantity, four contained one and a half grains per gallon, two contained three-quarters of a grain per gallon, and one contained half a grain per gallon. A discussion took place at the meeting of the committee regarding the prosecution of offending brewers, but no decision was arrived at. The medical officer of health of Crewe has also examined 21 samples of beer and has found traces of arsenic in 10. There were about 30 cases of beer poisoning, two of which were dangerous cases.

The Victoria Central Hospital, Liscard.

On Jan. 1st the New Victoria Central Hospital, Liscard, was formally opened by Mr. James Wright, the chairman of the Wallasey District Council, in the presence of a large and influential gathering. At the recent bazaar held to raise a fund for furnishing the institution the large sum of £6000 was obtained, thus enabling the committee to clear off all liabilities and furnish the hospital in a complete manner. The institution enters on its career free from debt, which is a rare occurrence nowadays in hospital annals. In regard to the maintenance fund, half the necessary amount of £1200 has already been promised. There is accommodation for 40 beds in the building, which are in the nursing charge of a lady superintendent and eight nurses. The hospital received its first patients on Jan. 7th.

The British Congress on Tuberculosis.

Liverpool will be represented at the British Congress on Tuberculosis, which is to be opened by the Prince of Wales on July 22nd in the Queen's Hall, London, by Dr. Rubert Boyce, the energetic professor of pathology at University College, Liverpool, who will act as one of the secretaries of the pathological (including bacteriology) section.

A Liverpool Centenarian.

Mrs. Sarah Smith, residing in Beaumont-street, is reputed to have been born in 1797, so that she is now in her 104th year. The old lady is reported to be in excellent health, her only trouble being an occasional attack of rheumatism, which does not appear to have affected her health to any degree.

The Demolition of Insanitary Property: Local Government Board Inquiry: A Decreasing Mortality-rate.

Mr. E. P. Burse, one of the Local Government Board inspectors, recently heard evidence at the municipal buildings in favour of, and considered objections to, three applications by the Liverpool Corporation for the issue of provisional orders under Section 303 of the Public Health Act, 1875. The first application was for power to alter the Liverpool Sanitary Amendment Act, 1864, so as to enable the corporation to borrow, with the sanction of the Local Government Board, additional moneys for the purchase and demolition of insanitary houses. The town clerk, in support of the application, stated that at various times the corporation had obtained powers to borrow £200,000 for the demolition of insanitary property and the whole had been expended. Other powers were subsequently acquired to borrow additional sums also amounting to £200,000, nearly all of which had been expended. In a short time there would be a further report from the medical officer of health declaring that other houses were in an insanitary condition and unfit for human habitation, and they wished to take time by the forelock, and to provide the means for carrying out this work of improvement. The number of houses which had already been demolished by the corporation was about 6500. An assurance had been given to the Local Government Board by the corporation in regard to re-housing a certain number of the people displaced by the operations of the committee. 182 houses with recreation grounds were in course of erection by the corporation. They had also acquired sites in various directions for building upon; bringing up the total to 843 new houses; each house will accommodate between four and five people. There had been 1602 fewer deaths in Liverpool during the past six months as compared with the corresponding six months of last year, which showed a steady and continuous improvement. This happy result had, no doubt, been considerably helped by the destruction of insanitary areas, the widening of the streets, and the various improvements effected by the corporation in recent years.

Jan. 15th.

WALES AND WESTERN COUNTIES.

(FROM OUR OWN CORRESPONDENTS.)

Cardiff Infirmary.

As already reported in THE LANCET[1] there was a most unseemly dispute at the December meeting of the executive committee of the Cardiff Infirmary between the members of the medical board on the one hand and some of the other members, including one medical gentleman, on the other hand. The medical board had recommended the appointment of Dr. Owen L. Rhys to the position of assistant house surgeon, but the recommendation was met with a resolution refusing to accept the recommendation and appointing Mr. D. A. Fitzgerald to the post. This resolution was carried. Mr. Fitzgerald was acting temporarily as superintendent of the Cardiff Fever Hospital when a case of plague was treated in that institution, so that he is not unknown in the town, and the medical board would no doubt have heartily accepted the decision of the majority of the executive committee had it not been for an unfortunate expression of opinion by the mayor to the effect that Mr. Fitzgerald was rejected by the board because he was an Irishman and a Catholic, and he further said that the infirmary suffered in the eyes of the public because of the dominating influence of the medical board. "While the doctors are squabbling," said his worship, "patients are dying." This may be a smart epigram, but, like many epigrams, it does not convey the truth. The injustice of the expression was felt so keenly by Dr. Charles Vachell, the senior physician to the infirmary, that he then and there tendered his resignation, and it seemed not improbable that the entire staff would follow his example. This disaster has happily been averted, and at the January meeting the most influential members of the executive committee expressed their entire confidence in the staff, and the persuasions of General Lee, the chairman, even induced Dr. Vachell to withdraw his resignation. The whole incident cannot but be regretted by all those who have the good of the institution at heart, and though the storm may to a certain extent have cleared the air it is none the less to be deplored.

Memorial to the late Mr. F. W. Lewis.

In the first week of the new year Sir John Williams unveiled a memorial fountain at Llandovery which had been erected in memory of the late Mr. F. Williams Lewis, who practised in the town for many years. Mr. Lewis was a student at the Middlesex Hospital in the "seventies,"

[1] THE LANCET, Dec. 29th, 1900, p. 1923.

and after settling in Wales he was appointed Poor-law medical officer and medical officer of health of Llandovery. The fountain is a granite structure and cost about £600. It is the gift of the Rev. T. Evans and Mrs. Evans, who were close personal friends of Mr. Lewis.

Anti-vaccination Tactics.

The anti-vaccinationists have discovered still another method of delaying the vaccination of children. At the police-court held at Abertillery in December there were down for hearing six cases of neglect to have children vaccinated, but as the representative of the local anti-vaccination society objected to a medical man sitting on the bench Mr. W. E. Williams retired and the cases were adjourned for a month. At the adjourned hearing in January the same objection was taken and a further adjournment was made. The clerk to the magistrates very properly ruled that Mr. Williams was not disqualified from hearing the case. It is reported that there have been granted in Monmouthshire 407 certificates of exemption from vaccination since the passing of the Vaccination Act in 1898.

Notification of Measles.

At the last meeting of the Neath Rural District Council it was decided to delete measles from the list of notifiable diseases in spite of the strong protests of Mr. T. P. Whittington, the medical officer of health, and of Mr. James Elias, a medical member of the council and who is also the medical officer of health of the borough of Neath. The only districts in Glamorganshire in which this disease is now notified are Swansea and Neath borough.

Bequests to Medical Charities.

The late Mr. Richard Lewis of Hereford has bequeathed £300 to the Cardiff Infirmary and £150 to the Porthcawl rest.

Sanitation at Oystermouth.

The Oystermouth District Council, which includes within the area of its administration the popular Welsh health resorts known as the Mumbles and Langland Bay, has never displayed very conspicuous energy in carrying out its duties as a sanitary authority; indeed, upon more than one occasion members of the council have resented what they have been pleased to call the unnecessary interference of the medical officer of health of the county of Glamorgan. It is hoped that the appointment of Mr. A. Lloyd Jones, who holds the Diploma in Public Health of the University of Cambridge, to the vacant post of medical officer of health, is an indication that the council has at last become alive to its responsibilities.

Quack Literature.

The high wages prevailing in the colliery districts of Monmouthshire and of South Wales are being taken advantage of by the vendors of quack medicines. The "stomach pills" and the cough lozenges which are disposed of in large quantities on market days probably do little harm if they do no good. This cannot be said, however, of certain literature which is now being distributed broadcast throughout the most populous parts of the country. The vicious character of the publication may be gathered from the use of such expressions in a column headed "How to be happy though married" as "cures obstinate cases" and "regulator of the monthly courses," in connexion with certain lotions and suppositories the mode of application of which is described in considerable detail. Since every right-minded person is agreed that such broadsheets can only do harm there ought not to be much difficulty in securing their suppression.

Aberystwith Rural District Council.

The election of an inspector of nuisances by the Aberystwith Rural District Council was the occasion of some rather unusual proceedings. There were 40 candidates for the appointment, the salary of which is £105 per annum, and included in the number of applicants were the chairman and the vice-chairman of the council. These two gentlemen having been out-voted returned to their places in the council where one proposed and the other seconded the resolution appointing the successful candidate.

Lunacy in Wales.

Dr. R. S. Stewart, the deputy medical superintendent of the Glamorganshire County Asylum at Bridgend, has recently given some interesting details relating to the prevalence of lunacy in Wales. The Welsh counties having the largest proportionate number of lunatics are Brecknockshire, Radnorshire, Montgomeryshire, and Cardiganshire. In Glamorganshire the rate of lunacy is low and in the several unions of that county the rate per 10,000 of the population is in Neath, 24; Swansea, 22; Merthyr, 21; Cardiff, 20; Bridgend, 18; Cowbridge, 18; and Pontypridd, 10.

Newport and Monmouthshire Hospital.

The Newport and Monmouthshire Hospital has received a donation from an unusual source. It appears that the owner of a licensed house, the lease of which is expiring, offered to pay £2000 to the hospital funds in addition to a ground rent of £50 per annum for the lease of a block of buildings on land belonging to the Newport Corporation on condition that he should be allowed to erect a licensed house upon the land. The licensing magistrates having sanctioned the transfer the amount was formally voted to the hospital at the last meeting of the Newport Council, although some of the members protested and urged that it should be paid over to the borough fund or given to the technical instruction committee.

Pembrokeshire and Haverfordwest Infirmary.

This infirmary, an institution containing 34 beds, has been closed in order that the drainage system may be overhauled and reconstructed. The occurrence of a case of diphtheria among the patients led to an examination of the drains, resulting in the discovery of certain defects.

Jan. 14th.

SCOTLAND.

(FROM OUR OWN CORRESPONDENTS.)

Dietaries of the Poor in Edinburgh.

UNDER the auspices of the Scottish Society of Economists Dr. D. Noel Paton delivered a lecture on the evening of Jan. 9th in the Accountants' Hall, Queen-street, Edinburgh, on "Dietaries of the Poor in Edinburgh." Dr. Paton has lately been conducting investigations on somewhat similar lines to those so largely carried on in America with the object of ascertaining the energy-producing power of the food used among the people and also the proper amount of food for the average working man. Dr. Paton at this meeting gave an account of the researches which he had conducted. The conclusion which he arrived at was that the poorer classes of working people in the city of Edinburgh did not receive the food necessary for what had been estimated as the amount of energy which an ordinary labourer should be able to expend on his work. In the daily diet of some of the poorest classes whose wages were irregular it had even been found that the free labourers did not receive so much energy-producing food as did the inmates of asylums, hospitals, and prisons in this country. Oatmeal, that maker of Scots' bones and brains, came far down the list of articles of food in the dietaries which Dr. Paton had investigated. Bread, potatoes, milk, vegetables, and beef preceded it. In concluding his lecture Dr. Paton suggested that a first step towards remedying this state of matters might be taken by distributing simple tables among the people showing the amount of work-producing power which could be got for a pennyworth of the various ordinary articles of diet. Some discussion followed Dr. Paton's paper, after which a cordial vote of thanks was given to the lecturer.

Scottish Natural History Society.

At a meeting of the Scottish Natural History Society held on Jan. 10th Dr. David Hepburn delivered a lecture on "The Skull as a Basis for Race Classification." There were various methods of classifying the human race, such as the colour of the skin, the character of the hair, geographical distribution, &c., and Dr. Hepburn showed that the information derived from careful examination of the skull might be similarly utilised. He described the method of obtaining the measurement of the cranial box and showed how a classification of skulls might be made on the figures so obtained. He also pointed out the differences between the human skull and that of apes in that particular. He described the method of measurement by tapes and callipers and the system of calculating "indices." Subsequently he discussed the signification of the various results derived from skull measurements apart from their value as aids to a system of classification. He showed that at the time of birth a human infant had a distinctly human brain, while in the rest of its body, notably in its joints and bones, it presented striking resemblances to the anthropoid apes. From the fact that the brain was so clearly in advance of the rest

of the body he argued that the growth of the brain was the primary factor determining the growth of the skull. The lecture was illustrated by limelight illustrations from photographs and also by specimens of various types of skulls.

Cremation in Scotland.

The report of the directors of the Scottish Burial Reform and Cremation Society, Limited, for 1900 states that the number of cremations shows a steady increase every year. Every satisfaction continues to be expressed with the arrangements at the crematorium. The progress of the cremation movement is, however, slow in Scotland, only 75 cremations having taken place since the opening of the crematorium. The operation of the Act which was passed in 1900 granting to local authorities in England power to expend public moneys in erecting crematoriums has not yet been extended to Scotland. Various municipal authorities in England propose to exercise the powers thus given them, and at Hull a municipal crematorium has lately been opened. The directors regret that in spite of the express desire of the health authority the bodies of those who died from plague in the recent outbreak in Glasgow were not cremated, it is believed mainly owing to the opposition of the Roman Catholic clergy. The report goes on to urge that, as the wishes of many persons with regard to cremation have been disregarded after death, the forms of request issued by the society be signed in duplicate.

University of Edinburgh: Annual Report.

The annual report of the University of Edinburgh which has just been published shows that the total number of matriculated students for the past year was 2754. This includes 252 women. Of the total number 842 (including 215 women) were enrolled in the faculty of arts, 161 (including three women) in the faculty of science, 40 in the faculty of divinity, 348 in the faculty of law, 1338 (including 13 women) in the faculty of medicine, and 25 (including 21 women) in the faculty of music. Of the students of medicine 592, or 44 per cent., belonged to Scotland; 332, or nearly 25 per cent., were from England and Wales; 111 were from Ireland; 68 were from India; 209, or 15½ per cent., were from the British colonies; and 26 were from foreign countries. The number of women attending extra-academical lectures with a view to graduation in medicine in the University was 92. The following degrees were granted during 1900:—Master of Arts (M.A.), 125 (including 25 women); Doctor of Philosophy (D.Phil.), 1; Bachelor of Science (B.Sc.), 26; Doctor of Science (D.Sc.), 3; Bachelor of Divinity (B.D.), 3; Bachelor of Laws (LL.B.), 7; Bachelor of Medicine and Master in Surgery (M.B., C.M.), 15; Bachelor of Medicine and Bachelor of Surgery (M.B., Ch.B.), 180 (including 18 women); and Doctor of Medicine (M.D.), 53. The General Council of the University now numbers 8883. The schoolmasters' diploma was conferred on 14 candidates. For the first time in the history of the University the honorary degree of Doctor of Laws (LL.D) was conferred on a woman, Miss E. A. Ormerod, F.R.Nat.Soc., F.E.S., of St. Albans. The local examinations were to be discontinued after the examinations in June, 1901. The total annual value of the University Fellowships, scholarships, bursaries, and prizes now amounted to about £17,820. The first ordinance of the University Court which related to the separation of the teaching of forensic medicine and public health had been approved by the Queen in Council and arrangements were being made to bring its provisions into operation at an early date. The re-cataloguing of the University library for which a portion of Sir William Fraser's bequest had been set apart, was now being carried out under supervision by a special staff of eight cataloguers. By the end of November over 106,000 volumes had been catalogued in more than 90,000 entries and 11,000 cross references. This is believed to be about half the contents of the library. A large special fund for the purchase of standard works was a pressing necessity, it being at present almost impossible to purchase expensive volumes in many branches of science which a well-equipped university library ought to possess. The want of funds was also much felt in connexion with the increasingly large number of works and periodicals connected with scientific research. Three vacancies in the professoriate had occurred during the year through the death of Sir Thomas Grainger Stewart, for 24 years professor of medicine and of clinical medicine; the death of Mr. George Frederick Armstrong, M.A., C.E., professor of engineering and the resignation of Professor John Philip Wood, W.S., of the chair of Conveyancing. The chair of Medicine had been filled by the appointment of Dr. John Wyllie, and Mr. John Little Mounsey, W.S., had succeeded Professor Wood. The chair of Engineering had not yet been filled up. Sir John Batty Tuke had been elected as member of Parliament for the universities of Edinburgh and St. Andrews, in room of Sir W. O. Priestley, whose death had occurred in April. The construction of "The John Usher Institute of Public Health," for which the University was indebted to the munificence of Sir John Usher of Norton, Bart., had during the year made considerable progress. In connexion with the war in South Africa the University had accepted the invitation of the Secretary of State for War to nominate candidates for commissions in various branches of the military service. The Senatus had granted special privileges to students who volunteered for active service and proposed to erect a memorial tablet in the M'Ewan Hall to those who fell in the war. Professor John Chiene had been given leave of absence to enable him to proceed to South Africa as consulting surgeon to Her Majesty's forces and a number of graduates and undergraduates of the University had been on the staff of the Edinburgh and East of Scotland Hospital which had been stationed at Norval's Pont.

Glasgow Royal Infirmary.

The decision of the committee concerned with the rebuilding of the infirmary in reference to the selection of a plan not advised by the assessor continues to excite some comment in the city, but the affair must now be regarded as a *chose jugée*. At a meeting held on Jan. 11th a report from the newly-appointed architect regarding the order and method of reconstruction was received and adopted. This involves the postponement of the re-erection of the front of the infirmary in the form of a Jubilee memorial until after the main part of the new hospital has been built, a decision demanded by the necessity for providing accommodation for patients, though certainly to be regretted on sentimental grounds. Concerning the financial aspect of the new undertaking it was stated that the committee had already nearly £100,000, and that with this they proposed to proceed with the erection of the north or surgical block. This it is calculated will occupy fully two years, after which a further appeal for funds will be necessary. Before the entire scheme is completed it is calculated that some eight or 10 years will have elapsed, and thus the claim upon the charitable public will assume a less severe front than if an attempt were made to raise the entire £240,000 at one time.

Glasgow Samaritan Hospital.

It has been decided by the medical staff, with the approval of the directors, to further develop the clinical teaching opportunities of the hospital by the institution of courses of lectures on gynæcology. The first course is to be given by Mr. J. Stuart Nairne, F.R.C.S. Edin., and is to commence on Jan. 23rd. The lectures are open to all medical practitioners.

Glasgow Sewage Disposal.

The town council of Glasgow, with a view to cultivate public interest in municipal undertakings, has instituted a course of popular lectures on the work of the several corporation departments and the fifth lecture of the series was delivered on Jan. 13th by Mr. A. B. M'Donald, city engineer. The subject dealt with was the disposal of the city sewage. Amongst other interesting items it was stated that there are at present 297 miles of subterranean sewers in the city, the greater part of which discharge into the harbour. The volume of sewage amounts to 55,000,000 gallons each day and it is calculated that each million gallons contribute 40 tons of pollution to the river. The sewage works constructed six years ago at Dalmarnock deal with some 16,000,000 gallons of sewage daily and in this proportion diminish the objectionable matter introduced into the Clyde, which still, however, receives daily some 1560 tons of sewage sludge. It has now been decided by the construction of 30 miles of river sewers to intercept the whole drainage which at present enters the river and to carry it beyond the city boundary where it is to be purified by the precipitation and filtration method now in operation at Dalmarnock. The works designed to effect this will, with the sole exception of the London main drainage area, be the largest in the world, and will serve an area of 29 square miles, which is to include not only Glasgow but a number of neighbouring towns. The

volumes to be dealt with, including rainfall, are estimated at 160,000,000 gallons daily.

Glasgow University.

The memorial window to the late Principal Caird which has been placed in the Bute Hall was unveiled on Jan. 12th in the presence of a large company. Among those taking part in the ceremony were Principal Story, the Master of Baliol (Dr. Edward Caird), Sir William T. Gairdner, K.C.B., and Mr. James A. Campbell, M.P. The scheme for the extension and better equipment of the University is about to take definite shape and the public will shortly have an opportunity of sending in their subscriptions. It is announced that a sum of £21 000 has already been promised. The executive committee has been appointed and includes the names of Professor J. G. McKendrick, Professor J. Glaister, and Professor R. Stockman as representatives of the medical faculty. On the motion of Dr. D. C. McVail the University Court has approved of the principle of the institution of a summer session in the faculty of arts and has requested the Senate to consider and advise on the question.—Professor De Burgh Birch, of the Yorkshire College, Leeds, has been appointed an examiner in physiology and Dr. James Ritchie, of Oxford University, an examiner in pathology. The Gifford lectures on Natural Religion during the present session are being delivered by Dr. Edward Caird, formerly professor of moral philosophy in the University.

Jan. 14th.

PARIS.

(FROM OUR OWN CORRESPONDENT.)

Noxious Gases in Dwelling-houses.

THE simultaneous deaths of two persons well known in the fashionable world of Paris from some cause which remains as yet undiscovered (I will say at once that either suicide or homicide is out of the question) has turned the attention of hygienists to the escape of toxic gases either from a stove in the house itself or in that of a neighbour. Cases of asphyxiation by carbonic oxide, which were very common when slow-combustion stoves of the Choubersky type were so much in use, have of late become less frequent since this kind of stove has been less in use. But they probably throw a light on the decease of certain persons found dead and cold in bed whose deaths might easily be put down to a ruptured aneurysm or some such cause but which medical men too often recognised as due to carbonic oxide coming from a stove in the room or, more treacherously still, through faults in the chimney of a neighbour's house who used this method of warming. It is true that the experts have not so far irrefutably demonstrated that the deaths of Monsieur and Madame T—— were due to carbonic oxide poisoning, and experiments are still being made with animals placed in the room with the suspected stove alight. But owing to the position of the victims widespread excitement has been aroused, and the fatality has done more to cause the subject to be threshed out than all the reports of engineers for 20 years. As a matter of fact I may say that a scandal of any kind does more to bring about administrative or moral improvement than anything else. The Prefect of Police has accordingly just nominated a committee composed of engineers, hygienists, and architects whose duties are altogether novel. If any tenant complains of noxious smells from the chimney and the landlord maintains that these are quite usual, that everything is in perfect order, and that no alteration is necessary, the committee will examine into the tenant's case, and if they find his complaint justified the landlord will have to carry out the necessary repairs. If he refuses the committee will order the work to be done and will charge the expense to the landlord.

The Association of Medical Men of the Seine and Hospital Reform.

The last meeting of the Association of Medical Men of the Seine was extremely interesting and some very important decisions were arrived at. After an admirable paper by M. Jamin, the President, entitled "Optima Medicorum Concordia," had been read, M. Philippeau, the treasurer, read his report, which, among other things, showed that the association had a balance in hand of 10,000 francs. The association then elected 125 new members and also nominated its council for 1901. The yearly subscription was reduced from 15 to 10 francs, and it was agreed that fresh blood should be introduced into the council, only members of the managing committee being eligible for re-election. The sitting then became very animated over the discussion on the report of M. Thiery on hospital abuse and gratuitous medical advice, and in reference to these questions M. Dorison presented the demands of the medical men attached to the Bureaux de Bienfaisance. These were as follows. The Medical Society of the Bureaux de Bienfaisance, considering that the system of out-patient hospital relief (1) does not practise a proper sorting out of the persons who apply for relief so that only the poor, who alone have the right to gratuitous advice and medicine, are selected; (2) is not now justified as formerly by the presence of the senior medical officers; and (3) is simply since the creation of the dispensaries a replica (*double emploi*) of the work carried on by the Bureaux de Bienfaisance, except that it does not supply medicine (a fact which is equivalent to saying that the hospital out-patient system only provides for persons who can pay for their medicine and therefore for those very people for whom gratuitous advice was not provided)—the association, taking all this into consideration, resolves: (*a*) that the out-patient departments of hospitals should be done away with; and (*b*) that admission orders for the hospitals should only be provided by the medical officers of the Bureaux de Bienfaisance, except of course in cases of urgency as laid down in the regulations. M. Dorison was unable to be present and so could not defend the views brought forward by him or reply to questions, while the members of the association not having all the facts before them could not discuss the matter with full knowledge. These questions of charitable relief are difficult for anyone who has not studied them carefully and much more so when they are suddenly sprung upon an audience. Some of the members present had but the scantiest knowledge of the questions at issue; others went off into the discussion of parallel questions such as the right of the Assistance Publique to sell or buy sites, sanatoria, &c., all questions excellent in themselves but beside the mark on this occasion. Finally, however, the meeting, asked for its opinion upon the report of M. Dorison, unanimously passed the following motion:—

The Association of Medical Men of the Seine hereby resolves that the out-patient department of the hospitals should be done away with.

The question of admission to the hospitals, which was somewhat more delicate, gave rise to a long debate. Finally, the following motion, standing in the names of M. Mabec and M. Le Baron, was carried:—

The Association of Medical Men of the Seine assembled in general meeting resolves, that hospital treatment should be reserved solely for the poor and needy, and should be absolutely gratuitous.

A special committee was appointed to consider ways and means for bringing about this result.

Total Gastrectomy; Recovery.

At a meeting of the Academy of Medicine held on Jan. 8th, M. Boeckel read a paper upon the case of a woman, aged 38 years, upon whom he had performed total gastrectomy some months ago for a malignant growth supervening upon an old ulcer. This is the first operation of the kind which has been performed in France, and M. Boeckel remarked that the operation was not only compatible with life, but it brought about a great improvement in the condition of the patient. If the new growth were well defined and the neighbouring organs were healthy the operation might well be successful. Whether absolutely so M. Boeckel could not at present say, but that it would be successful for a certain time the three cases which had been reported in other countries and that by M. Boeckel himself showed without doubt. After the opening of the abdomen the operation was divided into five stages, as follows: (1) the freeing of the greater curvature by division of the gastro-colic ligament; (2) the freeing of the upper pole of the stomach by dividing the cardiac end when clamped between two pairs of forceps; (3) the freeing of the lesser curvature by division of the gastro-hepatic ligament; (4) the freeing of the lower pole of the stomach by dividing the first part of the duodenum clamped in the same way as the cardiac end; (5) the union of the cardiac end with the duodenum. Stitching the abdominal wall, no drainage being employed, finished the operation. M. Boeckel's patient made an uninterrupted recovery. The wound united by first intention, no fistula resulted, and the patient got up on the twenty-second day and left the hospital on the thirty-third day. The

digestive functions were soon re-established and were satisfactorily performed so long as the patient was fed with small quantities of easily digested food at frequent intervals. As showing that assimilation was properly carried on he would mention that the patient gained 20 pounds in weight.

Jan. 16th.

BERLIN.

(FROM OUR OWN CORRESPONDENT.)

The Case of Professor Neisser.

THE incident in which Professor Neisser figured prominently, as mentioned in THE LANCET of March 31st, 1900, p. 970, seems now to be closed. It will be remembered that he was censured both in Parliament and in the daily newspapers for having, as his detractors alleged, performed inoculations of syphilitic virus on patients in his clinic; the actual facts, however, were of a much less culpable nature, for the experiments in question were in reality injections of the sterilised blood serum of syphilitic persons given to prostitutes and to two children in the hope of producing immunity. In the Parliamentary debate which took place some months ago the Minister of Public Instruction stated that the experiments had not been lightly undertaken but had been prompted by an eminently humane motive. Professor Neisser had, however, made the injections without the consent of the patients, and a prosecution was therefore resolved on, but as the alleged offence had been committed six years ago proceedings could not be taken in an ordinary court of law. Another way was accordingly found. Professor Neisser holds an appointment at a State university, and being therefore an official responsible to the Government the Government prosecuted him before a court of discipline. Several patients and some of the students and members of the medical staff of the clinic who had assisted at the experiments were summoned as witnesses, but owing to the long period which had elapsed since the occurrences in question much time was consumed before the addresses of all the witnesses could be ascertained, so that the decision of the court was given only a few days ago—namely, more than eight months after the debate in Parliament. The proceedings before a court of discipline are never public, so that no particulars can be given except that the accused was declared guilty of conduct unbecoming his position as a professor at a State university; he has not been removed from his appointment as professor, but he has been ordered to pay a fine and has been severely reprimanded. It is to be hoped that the matter is now at an end and that public feeling, which was at one time greatly excited by the misrepresentations that were current, will now be appeased. The Minister of Public Instruction has also addressed a circular to the principal officers of clinics, whether in connexion with universities or not, drawing their attention to the case of Professor Neisser, advising them to abstain from experiments which are not directly concerned with the cure of disease or the production of immunity, and stating that the law does not allow any dangerous treatment or operation to be undertaken without the patient's consent. He also makes the principal officers responsible for any misdemeanour in this respect that may be committed by their assistants or other members of the staff.

An Unauthorised Necropsy.

Another alleged medical scandal has been reported lately by the Berlin daily newspapers. Dr. Hebold, the chief medical officer of the Berlin Municipal Asylum for Epileptics at Wuhlgarten, is said to have made a post-mortem examination of an inmate of the asylum although the parents of the deceased had expressly declined to allow the body to be opened. The deceased was described as being one of the worst cases in the asylum, having sometimes as many as 50 fits in a day. Dr. Hebold removed the brain immediately after death and ordered a wreath to be put on the head to conceal the traces of the necropsy. But his most blameable action was that he exhumed the body on the night after the funeral and removed the head, which was afterwards preserved in alcohol. These facts were disclosed by an attendant who had been dismissed by Dr. Hebold and who in this way revenged himself upon his former master. Dr. Hebold, together with two attendants at the asylum who had assisted him, will be prosecuted, and the municipal council will perhaps be forced by public opinion to dismiss him from his office. Apparently Dr. Hebold has been misled by his scientific zeal to commit a grave misdemeanour repugnant to the majority of the medical profession.

Plica Polonica.

A collective investigation on the frequency of plica polonica in the eastern districts of Prussia has been made by the medical department. The localities which formed the subject of inquiry were the districts of Posen, Bromberg, and Marienwerder, where the greater part of the population are Poles. It was stated that people suffering from plica polonica were found in 385 towns and villages of the district of Marienwerder, in 582 of Bromberg, and in 820 of Posen. The number of patients was 1372, 1858, and 2507 respectively, of whom 682 were males and 5055 were females. The great majority were Poles. It is very difficult to eradicate this repulsive disease because the general ignorance of the population is a serious impediment to the adoption of hygienic measures. Moreover, some of these people are of opinion that plica polonica is a kind of prophylactic against certain diseases and that it would be dangerous to clean the hair in these cases.

Disinfection of Sponges.

A new method for the disinfection of sponges has been described by Dr. Elsberg of New York in the *Centralblatt für Chirurgie*. He maintains the impossibility of disinfecting sponges by boiling or by steam, as is done in the case of other surgical materials, and proposes the following method. The sponges are put for 24 hours in an 8 per cent. solution of hydrochloric acid to clear them from calcareous matter and dirt and are then washed in water. They are afterwards boiled for from five to 20 minutes in a solution of 10 parts of potash and 20 parts of tannic acid in 1000 parts of water and washed again in sterilised water or in a solution of carbolic acid till the brown colour of the tannate of potash has disappeared. They are finally preserved in a solution containing from 2 to 5 per cent. of carbolic acid. By this treatment the sponges do not lose any of their good qualities; they remain porous, elastic, and soft, even although they may have been boiled several times. By bacteriological examination it was found that large sponges infected with streptococci and the bacillus of anthrax and its spores proved to be absolutely sterile after five minutes' boiling in the above solution. Dr. Elsberg therefore recommends a return to the use of sponges which have of late almost disappeared from operating-rooms owing to the fear of their conveying infection.

Jan. 14th.

Obituary.

ARCHIBALD HAMILTON JACOB, M.D. T.C.D., F.R.C.S. IREL.

DR. ARCHIBALD HAMILTON JACOB died on Jan. 12th at his residence, Ely-place, Dublin, from an attack of bronchial asthma, from which disease he had been a sufferer for some years. By his death at 63 years of age his medical friends and colleagues in Dublin and the medical profession all over Ireland have lost a surgeon and colleague whose place it will be very difficult to fill. Dr. Jacob obtained the M.D. of Trinity College, Dublin, in 1862, and has been a prominent Fellow of the Royal College of Surgeons in Ireland for 37 years. He filled the position of professor of ophthalmology in that College for many years, was a senior of its Council and in 1882 was unanimously elected its secretary. In 1866 he succeeded his eminent father as ophthalmic surgeon to the City of Dublin Hospital and in 1872 he opened the Dublin Ear and Eye Infirmary, acting as its chief surgeon, while he subsequently filled the office of ophthalmic surgeon to the House of Industry Hospitals. For some years, while chief surgeon to the Dublin Eye and Ear Infirmary he was also ophthalmic surgeon to the Richmond, Whitworth, and Hardwicke Hospitals and to the City of Dublin Hospital as well.

In 1880 he had the honour of being appointed oculist in ordinary to his Excellency the Lord Lieutenant of Ireland—Earl Cowper—a position which he has filled under all succeeding Viceroys to the present time. There was no position of honour in Dublin medicine to which Dr. Jacob could

not have attained, but he always preferred largely to devote his talents and his unselfish energies to the advancement of his profession in public paths. He served as President of the Irish Medical Association, and during his term of office and ever since he devoted much of his time to the interests of his poorer brethren of the medical profession and to the advancement of their just claims. He was chief editor and proprietor of the *Medical Press and Circular*, and for many years he proved a fearless and able advocate of the rights of the Poor-law medical practitioners of Ireland to an adequate salary, independence, and pension in old age. He inherited the ability and public spirit of his father, and in advocating a cause by eloquent speech and pen never stayed to think whether he was serving his own personal interest and his own professional welfare. Those for whom he did so much cannot soon forget him, and his memory will long be held in high repute in medical and private circles in Dublin, not only for his eminent ability but for his fearless, upright, and kindly character. The Council and Fellows of the Royal College of Surgeons in Ireland attended his funeral on Wednesday, Jan. 16th, when his remains were removed from the house where he and his father lived for so many years at Ely-place.

EUGENE GODDARD, M.D. DURH.

A WIDE circle of friends and patients will be grieved to hear of the death of Dr. Eugene Goddard of Highbury New Park, N. After a morning's hard work he was seized with a rigor followed by faintness, frequent vomiting, and indications of abdominal mischief which ultimately developed into general peritonitis resulting in death on Jan. 13th, the seventh day of his illness. Those who had the pleasure and advantage of Dr. Goddard's acquaintance will severely feel their loss. To a mind generally well stocked were added remarkable clearness and fluency of language and a fund of humour which never failed to give point to his words. Thorough in all he undertook, prompt and decided in action, scrupulously upright and fearless, he was always a courteous gentleman. He seemed to impart brightness to all around him and most of all to those who sought his professional aid, and great was the confidence which his patients placed in him and the esteem with which they regarded him. Dr. Goddard recognised the gravity of his illness and met his death at the comparatively early age of 60 years with cheerful resignation and courage.

DEATHS OF EMINENT FOREIGN MEDICAL MEN.—The deaths of the following eminent foreign medical men are announced:—Dr. Ephraim Ingals, formerly Professor of Materia Medica and of Forensic Medicine in the Rush Medical College, Chicago.—Dr. Dubrueil, a well-known Montpellier surgeon.—Dr. Duclos of Tours, Corresponding Member of the Paris Academy of Medicine.

Medical News.

EXETER WATER SCHEME.—It is estimated that the new water scheme for Exeter will cost about £48,000.

IN MEMORIAM.—For the endowment of a bed, in memoriam, the treasurer of Guy's Hospital has received £1000 from "G. R."

APPOINTMENT OF A MEDICAL OFFICER OF HEALTH.—At the meeting of the Rhondda District Council held on Jan. 11th Dr. D. J. Jenkins, assistant medical officer of health for Bethnal-green, was appointed medical officer of health for the Rhondda district. There were 29 candidates.

HEALTH OF BRISTOL.—At the meeting of the Bristol Health Committee held on Jan. 8th Dr. D. S. Davies, the medical officer of health, reported that 8972 births were registered during 1900, giving a birth-rate of 27·8 per 1000, compared with 29 per 1000 for 1899. This is the lowest birth-rate which Dr. Davies has recorded in Bristol. The number of deaths was 5397, equal to a rate of 16·6 per 1000, as against 18·2 per 1000 for 1899. The infantile mortality under one year per 1000 births was 183, which is the lowest recorded for the past ten years. The deaths registered from the principal zymotic diseases were equivalent to a rate of 1·8 per 1000, the same as recorded in the previous year.

LUNACY IN GLOUCESTERSHIRE.—At the meeting of the Gloucestershire County Council held on Jan. 7th it was reported that 243 patients had been admitted to the Gloucestershire County Lunatic Asylum in 1900, against 292 in 1899; the average number resident in the asylums were 1054, against 1066 in the preceding year. Profit to the amount of £2651. which had accrued from private and other patients, had been applied to the reduction of the county rate. The charge for patients was now 9*s*. per week.

PLYMOUTH ROYAL EYE INFIRMARY.—The annual meeting of the supporters of this institution was held on Jan. 9th, under the presidency of Mr. H. Serpell. The report stated that 2289 patients had been treated during 1900, including 249 in-patients. 1980 patients were treated in 1899. The financial statement showed that the income was satisfactory and that the expenditure amounted to £1073, against £813 in the previous year. The cost of the new buildings amounted to £16,569. The committee acknowledged £1000 from Sir Massey Lopes towards the endowment fund and mentioned that a similar amount was given by him in 1899. As the necessary expenditure in carrying out the work of the new infirmary will be great the committee appeal for increased subscriptions.

SOCIETY FOR RELIEF OF WIDOWS AND ORPHANS OF MEDICAL MEN.—A quarterly court of the directors of this society was held on Jan. 9th, at 11, Chandos-street, W., the President, Mr. Christopher Heath, being in the chair. 16 new members were elected, and the deaths of Dr. Potter, acting treasurer, and Dr. Stewart were reported. Mr. Christopher Heath proposed from the chair, seconded by Dr. C. J. Cullingworth, as follows:—

> The quarterly court of directors of the Society for Relief of Widows and Orphans of Medical Men desires to record its great regret at the recent death of Dr. Potter, acting treasurer, a most energetic officer of the society, and also desires to express to Mrs. Potter its deep sympathy with her and her family in their bereavement.

Fresh applications for relief were read from two widows and grants at the rate of £50 per annum were made to them. It was resolved that a sum of £1229 10*s*. be distributed among the 49 widows, 12 orphans, and six recipients from the Copeland Funds now in receipt of grants. The Christmas present, amounting to £531, had been given on Dec. 17th. The expenses of the quarter were £78 9*s*.

ROYAL METEOROLOGICAL SOCIETY.—The annual general meeting of this society was held on Dec. 16th at the house of the Institution of Civil Engineers, Great George-street, Westminster. Dr. C Theodore Williams delivered the presidential address, taking for his subject "The Climate of Norway and its Factors." He considered that the meteorology of Norway should prove an attractive study for the society as having much in common with that of our country, both the Norwegian and the British shores being influenced by the same Gulf Stream and having their winters and summers tempered by the same equalising agency. The factors which influenced the climate were (1) the insular character of the country; (2) the distribution of the mountain ranges, which explained to a large extent the rainfall; (3) the waters of the ocean, which from a variety of circumstances came into close connexion with much of the country and thus tempered extremes of climate; and (4) the sun, which in that latitude remained in the summer long above the horizon and in the winter long below it. The address was illustrated by a large number of lantern slides of Norwegian scenery, embracing mountains, glaciers, floods, &c.

THE ROYAL COMMISSION ON SEWAGE DISPOSAL.—Sir Michael Foster, M.P., F.R.S., Major-General Phipps Carey, Colonel Harding, and Mr. J. J. Willis, the visiting members of the Commission, recently visited the Reigate Corporation sewage works at Redhill to inspect the Candy-Caink Revolving Sprinkler System and Polarite Oxidation Bacterial Bed which have been in operation there for over two years. They were met at Redhill by the mayor, the borough engineer (Mr. W. H. Prescott), Mr. Frank Candy, and Mr. F. Pullen Candy, and they made a careful investigation of the system. It is claimed for this system that by means of the

polarite oxidising aerobic bed, fed in an intermittent continuous manner by the Candy-Caink Revolving Sprinklers, with about half an hour's treatment a very strong sewage containing tannery and brewery refuse can be converted into a bright, odourless, and oxygenated effluent. After the inspection the members of the Royal Commission adjourned to the Town Hall to take the evidence of Mr. Frank Candy, General Manager of the International Purification Syndicate, and of the borough engineer, Mr. Prescott, who explained the working of the system and tendered analytical results showing an average purification of 97 per cent.

PRESENTATIONS TO MEDICAL MEN.—A large number of the residents of Llandovery assembled on Jan. 3rd in the principal public thoroughfare of the town to witness the unveiling of a massive granite fountain erected to the memory of the late Mr. Frederick W. Lewis, M.B. Lond., of Stoke Newington-road, by his devoted friends, the Rev. Thomas Evans, J.P., and Mrs. Evans, formerly of Henllys, at a cost of £500.—On Jan. 1st Mr. John Moorhead, M.D.R.U.I., M.R.C.S. Eng., of Weymouth, on his retirement and in recognition and appreciation of his 43 years' valuable services to the Weymouth Royal Hospital, was presented by the Mayor of the borough on behalf of the subscribers with a silver epergne and candelabrum, accompanied by an album containing an artistically illuminated address. Dr. Moorhead was the first honorary medical officer to the institution.—Mr. Hunter U. Walker, L.R.C.P., L.R.C.S. Edin., and Mrs. Hunter Walker of Clapton, have been the recipients of a silver inkstand and pens from the ladies of the Clapton Presbyterian Church in acknowledgment of their services in conducting a course of ambulance lectures connected with the St. John Ambulance Association. All the members of the class obtained the Red Cross certificates.

Appointments.

Successful applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward it to THE LANCET *Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, for publication in the next number.*

ALEXANDER, JOHN DAVEY, L.R.C.P. Ed., L.F.P.S. Glasg., has been re-appointed Medical Officer of Health for the Porthcawl (Glamorganshire) Urban District.

BAILEY, BERNARD E. G., M.R.C.S., L.R.C.P., has been appointed House Physician to the East London Hospital for Children and Dispensary for Women, Shadwell, E., vice Oswin Shields.

BERSLEY, CLARENCE, L.R.C.P., L.R.C.S., D.P.H. Cantab., has been appointed Medical Officer of Health to the Budleigh Salterton Urban District, vice A. W. Kempe, resigned.

CONSTANT, FREDERICK, L.D.S. Eng., has been appointed Honorary Dental Surgeon to the Gravesend Hospital.

CULLEN, J. J., L.R.C.P., L.R.C.S. Irel., has been re-appointed Medical Officer, Castleknock and Blanchardstown District, county Dublin.

DICKENSON, G. O. M., M.B., B.S. Durham, has been appointed Assistant Medical Officer, Northumberland County Asylum, Morpeth.

EDWARDS, W. LLOYD, L.R.C.P. Lond., M.R.C.S., has been appointed to the Medical Charge of the troops at Barry Island, South Wales.

FORREST, J. G. S., L.R.C.P. Lond., M.R.C.S., has been appointed Medical Officer for the Workhouse, Thingoe Union, vice C. E. Priestley, resigned.

INGLE, CHARLES DURBAN, L.R.C.P. Lond., M.R.C.S., has been appointed Medical Officer for the No. 2a district of the Langport (Somerset) Union.

JONES, M. P., L.R.C.P. Lond., F.R.C.S. Eng., has been appointed Honorary Consulting Physician to the Royal Infirmary, Alfreton.

LISTER, THOMAS DAVID, M.D. Lond., M.R.C.P. Lond., has been appointed Assistant Physician to the Royal Hospital for Children and Women, Waterloo-road, London.

MACNAMARA, J. P., L.R.C.P. Lond., L.R.C.S. Irel., has been appointed Medical Officer of the Ladywell Workhouse, St. Olave's Union.

MARTIN, JOHN MIDDLETON, B.A., M.B., B.Ch., D.P.H. Cantab., L.S.A., has been appointed Medical Officer of Health for the Nailsworth Urban District Council (Gloucestershire), vice Thomas Partridge, resigned.

NIALL, EUGENE M., M.B. Lond., has been appointed House Surgeon to the West London Hospital, Hammersmith-road.

PENNY, FRANCIS, M.R.C.S., L.S.A., has been appointed a Medical Officer with the troops in South Africa.

PERCIVAL, BEAUMONT, M.B. Cantab., M.R.C.S., has been appointed House Surgeon to the Northampton General Infirmary.

RIGBY, HUGH MALLINSON, M.B., B.S. Lond., F.R.C.S. Eng., has been appointed Surgeon to the Poplar Hospital for Accidents, London.

ROSS, H., M.B., C.M., Aberd., has been appointed Medical Officer, Stratford-on-Avon Hospital.

SARGENT, P. W. G., M.B., B.C. Cantab., L.R.C.P. Lond., M.R.C.S., has been appointed Surgical Registrar, St. Thomas's Hospital, London.

SHIACH, SAMUEL ALLEN, M.D., C.M. Edin., has been appointed Medical Officer and Public Vaccinator for the St. Mellons District by the Newport (Mon.) Board of Guardians.

SPARKS, C. E., M.B., B.C. Cantab., has been appointed, *pro tem*, Medical Officer for Hersham District, Chertsey Union.

STEUART, M. BABINGTON, M.B., C.M. Edin., has been appointed District Medical Officer for Bovey Tracey and Ilsington (North Devon). Corrected notice.

TURNER, T. W., L.R.C.P. Lond., M.R.C.S., has been appointed District Medical Officer, Woodstock Union, vice H. Saunders.

WALKER, HUNTER URQUHART, L.R.C.P., L.R.C.S. Edin., has been appointed by the Home Secretary Divisional Surgeon of the Police for Hackney, N.E.

WARBURTON, W. P., L.R.C.P., L.R.C.S. Edin., L.F.P.S. Glasg., has been appointed Workhouse and District Medical Officer, Skirlaugh Union, vice C. Soloman, resigned.

Vacancies.

For further information regarding each vacancy reference should be made to the advertisement (see Index).

BIRKENHEAD BOROUGH HOSPITAL.—Honorary Dentist.

BIRMINGHAM WORKHOUSE INFIRMARY.—Assistant Resident Medical Officer. Salary £100 per annum, with furnished apartments, rations (which do not include alcoholic liquors), coals, gas, laundry, and attendance.

BOLTON INFIRMARY AND DISPENSARY.—Senior House Surgeon. Salary £120 per annum, with furnished apartments, board, and attendance.

BOROUGH OF RICHMOND (SURREY).—Medical Officer of Health. Salary £450 per annum, and will be recommended for appointment as Visiting Medical Officer to the Borough of Richmond (Surrey) and Heston and Isleworth Urban District Joint Isolation Hospital at an additional salary of £50 per annum.

BRADFORD ROYAL INFIRMARY.—Dispensary Surgeon. Salary £100 per annum, with board and residence.

BRIDGNORTH AND SOUTH SHROPSHIRE INFIRMARY, Bridgnorth.—House Surgeon. Salary £80, with board and lodgings in the infirmary.

BRISTOL CITY HOSPITALS.—Resident Medical Officer at the Ham Green Fever Hospital. Salary £150 per annum, with board, lodging, and washing.

CHELSEA HOSPITAL FOR WOMEN, Fulham-road, S.W.—Clinical Assistant, tenable for three months on payment of £8 8s.

CHORLTON-UPON-MEDLOCK DISPENSARY, Manchester.—Resident House Surgeon, unmarried. Salary £120 a year, with furnished rooms and attendance.

COUNTY ASYLUM, Shrewsbury.—Junior Assistant Medical Officer. Salary £130 per annum, rising by £10 a year to £150, with board, lodging, and washing.

DARLINGTON HOSPITAL AND DISPENSARY.—House Surgeon, unmarried. Salary £100 per annum, with board and lodging, and an allowance for cab hire.

DENTAL HOSPITAL OF LONDON AND LONDON SCHOOL OF DENTAL SURGERY, Leicester-square, W.C.—Demonstrator to superintend the teaching and work of the new students, &c. Honorarium £200 per annum. Also two Demonstrators to assist the Senior Students, one at an honorarium of £100 per annum, and one at an honorarium of £80 per annum.

DONCASTER GENERAL INFIRMARY AND DISPENSARY.—Assistant House Surgeon, unmarried. Board and residence provided.

EVELINA HOSPITAL FOR SICK CHILDREN, Southwark-bridge-road, London.—Senior Resident Medical Officer. Salary £70, with board and washing. Also Pathologist. Salary 100 guineas per annum.

FISHERTON HOUSE ASYLUM, Salisbury.—Assistant Medical Officer, unmarried. Salary £150 per annum, with board, lodging, and washing.

GENERAL HOSPITAL, Nottingham.—House Physician for two years. Salary £100, rising £10 a year to £120, with board, lodging, and washing.

GUILDFORD UNION.—District Medical Officer and Public Vaccinator, Woking District. Salary £80 per annum and vaccination fees.

HOSPITAL FOR SICK CHILDREN, Great Ormond-street, Bloomsbury, W.C.—House Surgeon. Salary £20, with board and residence in the hospital.

HOSPITAL FOR WOMEN, Soho-square, London, W.—Assistant Physician, also Assistant Surgeon.

LEICESTER INFIRMARY.—Second Assistant House Surgeon. Salary £80 per annum, with board, apartments, and washing.

LINCOLN HOSPITAL FOR INSANE.—Locum Tenens for six weeks from about 6th of February. Three guineas a week.

LIVERPOOL STANLEY HOSPITAL.—Junior House Surgeon. Salary £70 per annum. Also Third House Surgeon as Ambulance Surgeon. Salary £70 per annum, with board, residence, and washing.

LONDON LOCK HOSPITAL.—House Surgeon to the Female Hospital. Salary £80 per annum, with board, lodging, and washing.

MILLER HOSPITAL and ROYAL KENT DISPENSARY, Greenwich-road, S.E.—Junior Resident Medical Officer, tenable for six months, with prospect of re-election as Senior. Salary at the rate of £60 per annum, with board, attendance, and washing.

MONKWEARMOUTH AND SOUTHWICK HOSPITAL, Sunderland.—House Surgeon, unmarried. Salary £100 per annum, with board, residence, and washing.

NOTTINGHAM GENERAL DISPENSARY.—Assistant Resident Surgeon. Salary £140 per annum, all found except board.

OLDHAM INFIRMARY.—Senior House Surgeon. Salary £100 per annum, with board, residence, and washing.

PARISH OF ST. GILES, CAMBERWELL.—Assistant Medical Officer, twenty-one to thirty years of age, for the Workhouse at Gordon-road, Peckham. Salary £120 per annum, with furnished apartments outside the Workhouse, and an allowance of £1 1s. weekly in lieu of board and washing.

QUEEN ADELAIDE'S DISPENSARY, Bethnal-green, E.—Resident Medical Officer, unmarried, and under 35 years of age. Salary £100 per annum, with furnished apartments, coal, gas, and attendance.

QUEEN CHARLOTTE'S LYING-IN HOSPITAL, Marylebone-road, N.W.—Assistant Resident Medical Officer for four months. Salary at the rate of £50 per annum, with board, residence, and washing.

ROXBURGH DISTRICT ASYLUM, Melrose, N.B.—Assistant Medical Officer. Salary £110 per annum, with board, lodging, and washing.

ST. THOMAS'S HOSPITAL.—Assistant Surgeon. Must be a Fellow of the Royal College of Surgeons of England.

SCHOOL BOARD FOR LONDON—EVENING CONTINUATION SCHOOLS.—Lecturers and Examiners in First-Aid and Home Nursing. Qualified practitioners (men and women). Apply to the Clerk of the Evening Continuation Schools Committee, School Board for London, Victoria Embankment, W.C.

SEAMEN'S HOSPITAL SOCIETY.—Senior Dental Surgeon and also Junior Dental Surgeon. No salary, but first-class railway fare between London and the Hospitals will be allowed.

THE CHIEF INSPECTOR OF FACTORIES gives notice of vacancies for Certifying Surgeons under the Factory Acts at Bugbrooke, in the County of Northampton; at Petworth in the County of Surrey; at Nuneaton in the County of Warwick; and at West Linton in the County of Peebles.

TIVERTON (DEVONSHIRE) INFIRMARY AND DISPENSARY.—House Surgeon. Salary £80 and all found.

WESTERN GENERAL DISPENSARY, Marylebone-road, London.—Second House Surgeon, unmarried. Salary £75 per annum, with 10s. per month for washing, and board and residence.

WESTMINSTER HOSPITAL.—Obstetric Physician and also Assistant Obstetric Physician.

YORK DISPENSARY.—Resident Medical Officer, unmarried. Salary £110 a year, with board, lodging, and attendance.

Births, Marriages, and Deaths.

BIRTHS.

ANDREW.—On Jan. 9th, at Hendon, N.W., the wife of F. W. Andrew, M.R.C.S., L.R.C.P., of a daughter.

COLLARD.—On Jan. 13th, at Croydon, the wife of Stuartson Collard, F.R.C.S. Eng., of a daughter.

FOUNTAIN.—On Jan. 12th, at Arlington-park, Gunnersbury, W., the wife of E. Osborne Fountain, M.D., of a daughter.

GEORGE.—On Jan. 8th, at Port Isaac, Cornwall, the wife of R. Julyan George, M.D., of a son.

MCDOUGALL.—On Jan. 12th, at Woodcote-road, Wallington, Surrey, the wife of William Stewart McDougall, M.B., C.M., of a son.

MORGAN.—On Jan. 18th, at 24, Grove Park, Camberwell, S.E., the wife of W. Ellis Morgan, M.R.C.S., L.R.C.P., L.M., of a daughter.

NOBLE.—On Jan. 13th, at Grove-road, Walthamstow, the wife of W. G. Noble, Surgeon, of a daughter.

PANTING.—On Jan. 10th, at Harvey House, Watton, Norfolk, the wife of John Panting, M.A., M.D., of a son.

PENFOLD.—On Jan. 10th, at Brownhill-gardens, Catford, the wife of Surgeon E. A. Penfold, R.N., of a daughter.

SARGENT.—On Jan. 11th, at 300, Commercial-road, E., the wife of G. E. H. Sargent, L.S.A. Lond., of a daughter.

TEBB.—On Jan. 15th, at 226, Finchley-road, Hampstead, Bertha, the wife of Albert E. Tebb, M.D., B.S. Lond., M.R.C.S., D.P.H., &c., of a son.

WESTBROOK.—On Jan. 14th, at Old Town, Clapham-common, S.W., the wife of Ernest Westbrook, L.R.C.P., of a son.

WHITCHER.—On Jan. 11th, the wife of Dr. Charles Edgar Whitcher, of Hove, Sussex, of a son.

MARRIAGE.

BOYCE—JOHNSTON.—On Jan. 9th, at Bromborough parish church, Cheshire, Robert William Boyce, M.B., Professor of Pathology, Liverpool University College, to Kate Ethel Johnston, second daughter of William Johnston, of Woodlee, Bromborough, Cheshire.

DEATHS.

CLAPPERTON.—On Jan. 10th, aged 60, James Clapperton, M.D., Broughton, Hampshire.

GODDARD.—On Jan. 13th, at his residence, Highbury New-park, N., Eugene Goddard, M.D., son of the late Leonard Morse Goddard, M.R.C.S., of Clerkenwell, aged 60.

JACKMAN.—On Jan. 11th, at 19, Wood View-gardens, Highgate, Thomas Smith Harrison Jackman, M.R.C.S. Eng., and L.R.C.P. Lond., late of 11, Stoke Newington-road.

HALIDAY.—On Jan. 10th, at Thicket-road, Anerley, Saunders Barton Haliday, Surgeon-Lieutenant-Colonel, Indian Medical Service, aged 57.

LEUMANN.—On Jan. 7th, suddenly, Bernard Henry Frederick Leumann, M.B., of Stanley-park-road, Wallington, in his 32nd year.

SYMES.—On Jan. 14th, J. G. Symes, M.R.C.S., &c., Southfield, Weymouth, in his 76th year.

TINLEY.—On Jan. 10th, at Sandsend, near Whitby, Thomas Tinley, M.D., J.P., aged 55 years.

WAYLEN.—On the 10th inst., at Guildford, Western Australia, Alfred Robert Waylen, M.D., late Colonial Surgeon, eldest son of the late Alfred Waylen of Devizes, Wilts, and of Perth, Western Australia, aged 67.

N.B.—A fee of 5s. is charged for the insertion of Notices of Births, Marriages, and Deaths.

Notes, Short Comments, and Answers to Correspondents.

MEDICAL ATTENDANCE ON WORKMEN.

Two medical men practising at Bromley were obliged recently to have recourse to the county-court in order to obtain payment from a firm of timber merchants for attendance in the case of a workman who was injured in the course of his employment. The medical men appear to have on a previous occasion asked some question as to who was to remunerate them in the case of such accidents and to have received som vague answer from a person not clearly authorised to give it to the effect that it would be "all right," and evidence of this having been given His Honour Judge Emden seems to have been satisfied with it as evidence of a promise to pay, while he appears to have expressed in pretty plain terms his view of the defendants' conduct and to have laid particular stress upon their duty to make a definite arrangement as to the medical aid to be afforded to their workpeople in the case of accidents. The case was eventually settled, the plaintiffs accepting five guineas and costs to prevent further delay in the conclusion of the matter. The trial points to the difficulty which besets the medical man called in on an occasion of some urgency without a definite understanding as to the payment of his fees. It is often almost impossible to obtain a satisfactory undertaking with regard to them at the time when the service is rendered. Self-respecting firms take steps to have the business side of the transaction completed before the necessity for medical help arises.

THE REAFFORESTING OF IRELAND.

THE part which the vegetable kingdom plays in the economy of the life of man is generally recognised, but the connexion between arboriculture and the prosperity of a country is not so widely appreciated. Dr. Robert T. Cooper has published a pamphlet which deals with the neglected condition of arboriculture in Ireland, and this he is prepared to regard as the real grievance of that country. He pleads for a better study of the question in order that the British Government may be induced to reafforest the 2,000,000 or more acres of mountain land which at the present time are unproductive and subserve in no way to human interests. He points out that trees are a natural agency for the diminution and even for the prevention of the ill-effects of all kinds of climatic vicissitudes. Large portions of the upland surfaces, now practically bare rocks, might if grown over with trees be sheltered from rain and storm and form important catchment areas for the supply of rivers, &c. Moreover, the roots of the trees growing in such positions bring about the cleavage of rocks and cause fissures through which the rain finds its way to underground strata, which, becoming subcharged with moisture, discharge their overflow in the form of springs of naturally filtered water. The decay of the vegetation and the action of its contained acids upon the rock naturally form a rich manurial mould which is slowly washed down to the low-lying expansions of the country. Torrential streams would disappear and rivers would be purer, floods less frequent, and bog slides rare. We cannot endorse the suggestion that a Hibernian millenium would follow upon systematic tree-planting in Ireland, but we found Dr. Cooper's pamphlet, which was part of a lecture delivered in the Rotunda Rooms last autumn, very interesting reading.

"PROFESSOR EASTBURN, A.M.S."

THE crimp who used to swindle seamen out of their wages and clothing is, we fancy, nearly, if not quite, extinct; but there are worse swindlers than crimps who not only rob people of money but of their health in addition. We are led to these remarks by a letter which we have received from a medical man inclosing a letter which was received by a patient of his, a seaman who has been foolish enough to apply for treatment to a quack "practising" in Glasgow and calling himself Professor Eastburn, A.M.S. Eastburn's letter is adorned with a portrait, presumably of himself, together with an eagle and the Stars and Stripes, so we presume that he claims to be a citizen of the United States. Our correspondent informs us that his patient suffered from chronic gleet, that he wrote to Eastburn and received in reply a string of questions to answer, and that he paid £11 for four months' treatment. The medicine was always the same and upon the patient writing to say that he was not improving Eastburn replied, "Continue the same medicine and send more money to complete the £14 originally arranged for." Our correspondent adds that his patient received six bottles of medicine for his £11 and that Eastburn's fee to wealthy patients is from £40 to £50, but that the lowest sum for which he undertakes a case is £14. We cannot see why the legislature, which is rightly hard upon thieving should not find some way of putting down swindlers of this description. Such frauds are, in addition to their dishonesty, cruel to a degree. Eastburn is said to do a large business with seamen trading to and from Glasgow.

"VACCINATION FEES."

To the Editors of THE LANCET.

SIRS,—In THE LANCET of Dec. 22nd, 1900 (p. 1854), under your Answers to Correspondents, you have given a reply to "Public Vaccinator" which I think is hardly correct. You state that a public vaccinator is not entitled to charge 1*s* birth fee for children under four months vaccinated by himself. Upon reference to the Vaccination Order, 1898, Article III., Sec. 2, the law says: "The number of children in respect of whom payments are to be made under paragraph (*a*) of this article shall be the number of children in the lists to be sent by the vaccination officer to the public vaccinator as provided by paragraph 6 (*a*) of the Instructions to Vaccination Officers in the Fourth Schedule hereto, together with the number of children not included in such lists but vaccinated by the public vaccinator himself." This matter was pointed out to my guardians by the auditors and they have consequently paid me every quarter as above, and I should advise your correspondent "Public Vaccinator" to insist on payments being made to him. At the end of each quarter my guardians give me a list of children who have been reported by me on Form H as "postponed," with a request that I should continue to visit the children and report further. I maintain they have no authority to make this request and I have lately refused to observe the same. May I ask: 1. What should be done by the public vaccinator when a case has been postponed, say, one month? Is it his duty to call again, for there are no instructions in the Act for any other than the original visit? 2. What should be done by the public vaccinator if when he makes his pre-arranged visit he finds the door locked? 3. Have the guardians any authority to give orders to the public vaccinator which are not included in his original contract with them?

I am, Sirs, yours faithfully,

Jan. 9th, 1901. ANOTHER PUBLIC VACCINATOR.

THE PROGRESSIVE MEDICAL ALLIANCE AND OTHERS.

IN our issue of Sept. 29th, 1900, p. 981, we reprinted the greater portion of a four-page hand-bill issued by the Progressive Medical Alliance and suggested that the General Medical Council might take some notice of the graduates of British Universities whom the Alliance claims to have upon its staff and also of the lady physician. We have now received another bill of the Progressive Medical Alliance through a medical man who had it from one of his patients, the bill having been passed under the door of the patient's house. Coincidently we received from a second medical man the following bill emanating from an independent practitioner which had also been pushed under the door of the house of a patient of his:—

"Consultation, with or without medicine, One Shilling; Medicine 6d.
Examination, with or without certificate, Half-a-crown for Clubs, Insurances or other Societies.
At home Nine to Eleven o'clock every morning, at Three o'clock every Afternoon; and Seven to Eight o'clock every evening.
Sundays after 6 o'clock. Forenoon by Appointment.
Medicine and Attendance, Half-a-crown each week or part of a week.
No further charge for the remainder of the week. Seven days to the week, commencing at any time.
Vaccination, One Shilling; from Calf Lymph, Half-a-crown.
Teeth Extracted One Shilling each; Painless, Half-a-crown.
Teeth Stopped Half-a-crown each; and Artificial Teeth, One Guinea the Set.
Visiting Payments after Ten o'clock at Night, and before Eight o'clock in the Morning, according to time and distance.
Attendance includes Visits when patients are not able to attend at the Doctor's Surgery.
Midwifery, Accouchements, Confinements, Half-a-guinea. Fifteen shillings, One Guinea, and Two Guineas, according to agreement beforehand, when half the fee must be paid. The fee includes One week's after attendance and medicine.
Drugs, Medicines, and Proprietary Articles at Cash Prices.
Diseases of Women and Children attended.
Apply—
DR. ——,
Physician, Apothecary, Accoucheur and Surgeon.

Teeth Extracted, at any hour guaranteed painless.
The above are only for Cash payments, paid in advance."

Now, the Progressive Medical Alliance is obviously a quack association of the worst type and we think that no greater reproof could be given to a qualified man than to put on record the fact that he advertises himself in the same way as the Progressive Medical Alliance. We advise the correspondent who sent us the circular to communicate with the University from which Dr. —— received his degree. For this occasion we have withheld the offending practitioner's name, but we shall give him full publicity if his methods remain unaltered.

NEW DOMESTIC FILTERS.

WE have received from the London and General Water Purifying Company, Limited, of 157, Strand, W.C., two new designs in domestic water filters. One is described as a pump filter which consists of a pump connected with a filter tube of unglazed porcelain which has been shown to be in a series of severe bacteriological experiments germ-proof, yielding a filtrate absolutely sterile. The many valuable sanitary applications to which this portable filter may be put are obvious. The other filter is a main-service filter which may be connected directly with the supply. This consists of a small metal chamber, bell-shaped, packed with small pieces of marble and closed at the top with a disc of unglazed porcelain consisting of the same germ-proof material of which the pump-filter is made. Both filters are made in accordance with modern views on the subject, but we hope shortly to submit them to independent experiment with the view of being able to state their actual efficiency.

WANTED—A HOME.

To the Editors of THE LANCET.

SIRS,—Can any of your readers inform me of a home or institution where a long-standing (four years) case of hysteria in a young man might be treated at a small expense? I shall be much obliged.

I am, Sirs, yours faithfully,

Jan. 8th, 1901. YOUNG PRACTITIONER.

"THE CASE OF DR. PATRICK QUINLIVAN."

THE following further subscriptions have been received towards the fund on behalf of the widow of the late Dr. Quinlivan. The fund is now closed. Dr. C. Y. Pearson (Cork), £1 1*s*.; Mr. W. A. Farebrother, £1 1*s*.; Mr. Holland Wright, £1 1*s*.; C. F. W., 10*s*.

G. P.—There can be no hard-and-fast rules in the matter. The medical officer to a medical aid association has to remember that he must not take advantage of the position to advertise himself in any way at the expense of his brother practitioners. Any wide publication of his titles on door-plates or in circulars must be avoided, and as all canvassing on the part of the association is apt to be an advertisement of the medical officer he must in his own interests use his influence to prevent such proceedings.

J. A. D. can make inquiry in our columns for such a home, giving a name and address where answers will reach him. We do not know of any institution exactly meeting his wants.

Leicester.—The address of the Medical Défence Union is 4, Trafalgar-square, W.C. Dr. A. G. Bateman is the general secretary.

J. R. B.—The reports are published by Messrs. P. S. King and Son, London.

ERRATUM.—In an advertisement in THE LANCET of last week for an additional surgeon to the out-patient throat department of the Great Northern Central Hospital the Secretary points out that the word "and" was wrongly interpolated between the words "out-patient" and "throat department."

METEOROLOGICAL READINGS

(Taken daily at 8.30 a.m. by Steward's Instruments.)

THE LANCET Office, Jan. 17th, 1901.

Date	Barometer reduced to Sea Level and 32° F	Direction of Wind.	Rain-fall	Solar Radiation in Vacuo.	Maximum Temp. Shade	Min Temp	Wet Bulb	Dry Bulb	Remarks at 8.30 A.M.
Jan. 11	30·03	SSE	...	51	46	41	43	43	Foggy
,, 12	30·27	N.	...	53	44	40	40	40	Foggy
,, 13	30·49	S.E.	...	52	44	40	42	42	Cloudy
,, 14	30·44	E.	...	60	46	36	36	37	Foggy
,, 15	30·22	E.	...	53	40	33	33	35	Foggy
,, 16	29·85	E.	...	56	48	34	37	38	Hazy
,, 17	30·03	SSW	0·03	51	48	38	46	47	Overcast

Medical Diary for the ensuing Week.

OPERATIONS.

METROPOLITAN HOSPITALS.

MONDAY (21st).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), St. George's (2 P.M.), St. Mary's (2.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), Chelsea (2 P.M.), Samaritan (Gynæcological, by Physicians, 2 P.M.), Soho-square (2 P.M.), Royal Orthopædic (2 P.M.), City Orthopædic (4 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (2 P.M.).

TUESDAY (22nd).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), Guy's (1.30 P.M.), St. Thomas's (3.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), West London (2.30 P.M.), University College (2 P.M.), St. George's (1 P.M.), St. Mary's (1 P.M.), St. Mark's (2.30 P.M.), Cancer (2 P.M.), Metropolitan (2.30 P.M.), London Throat (2 P.M. and 6 P.M.), Royal Ear (3 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.).

WEDNESDAY (23rd).—St. Bartholomew's (1.30 P.M.), University College (2 P.M.), Royal Free (2 P.M.), Middlesex (1.30 P.M.), Charing-cross (3 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), King's College (2 P.M.), St. George's (Ophthalmic 1 P.M.), St. Mary's (2 P.M.), National Orthopædic (10 A.M.), St. Peter's (2 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Gt. Ormond-street (9.30 A.M.), Gt. Northern Central (2.30 P.M.), Westminster (2 P.M.), Metropolitan (2.30 P.M.), London Throat (2 P.M.), Cancer (2 P.M.)

THURSDAY (24th).—St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.) University College (2 P.M.), Charing-cross (3 P.M.), St. George's (1 P.M.), London (2 P.M.), King's College (2 P.M.), Middlesex (1.30 P.M.), St. Mary's (2.30 P.M.), Soho-square (2 P.M.), North-West London (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (Gynæcological, 2.30 P.M.), Metropolitan (2.30 P.M.), London Throat (2 P.M.), St. Mark's (2 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.).

FRIDAY (25th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Charing-cross (3 P.M.), St. George's (1 P.M.), King's College (2 P.M.), St. Mary's (2 P.M., Ophthalmic 10 A.M.), Cancer (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (2 P.M. and 6 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.).

SATURDAY (26th).—Royal Free (9 A.M. and 2 P.M.), Middlesex (1.30 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), University College (9.15 A.M.), Charing-cross (2 P.M.), St. George's (1 P.M.), St. Mary's (10 P.M.), London Throat (2 P.M.).

At the Royal Eye Hospital (2 P.M.), the Royal London Ophthalmic (10 A.M.), the Royal Westminster Ophthalmic (1.30 P.M.), and the Central London Ophthalmic Hospitals operations are performed daily.

SOCIETIES.

TUESDAY (22nd).—ROYAL MEDICAL AND CHIRURGICAL SOCIETY (20, Hanover-square, W.).—Adjourned Discussion on Address by Dr. E. S. Reynolds (Manchester) on Some Recent Cases of Arsenical (Beer) Poisoning (with lantern demonstration).

WEDNESDAY (23rd).—HUNTERIAN SOCIETY (London Institution, Finsbury-circus).—8.30 P.M. Paper:—Dr. A. Chaplin: The Treatment of Pleural Effusions.

DERMATOLOGICAL SOCIETY OF GREAT BRITAIN AND IRELAND (20, Hanover-square, W.).—4.30 P.M. Informal Exhibition of Cases 5 P.M. Meeting.

THURSDAY (24th).—NEUROLOGICAL SOCIETY OF LONDON (11, Chandos-street, W.).—8.30 P.M. Annual General Meeting. Election of Office Bearers. Dr. W. J. Mickle: Mental Wandering. (Presidential Address).

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

MONDAY (21st).—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Mr. M. Morris: Consultation. (Skin.)

TUESDAY (22nd).—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Dr. R. L. Bowles: Consultation. (Medical.)

WEDNESDAY (23rd).—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—5 P.M. Clinical Lecture:—Dr. A. Newsholme: The Prevention of Tuberculosis.

THURSDAY (24th).—CENTRAL LONDON THROAT, NOSE, AND EAR HOSPITAL (Gray's Inn-road, W.C.).—5 P.M. Mr. Lennox Browne: Intra-Nasal Obstructions; Hard—Deviations and Outgrowths of the Septum.

MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Mr. J. Hutchinson: Consultation. (Surgical.)

CHARING-CROSS HOSPITAL.—4 P.M. Dr. Galloway: Dermatological Demonstration. (Post-graduate Course.)

LONDON TEMPERANCE HOSPITAL.—2 P.M. Dr. S. Fenwick: Clinical Demonstration.

ROYAL INSTITUTION OF GREAT BRITAIN.—3 P.M. Mr. A. Willey: The Origin of Vertebrate Animals.

FRIDAY (25th).—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—2-3.30 P.M. Dr. J. Taylor: Class: Clinical Examination of the Nervous System. 4 P.M. Dr. StClair Thomson: Consultation. (Throat.)

EDITORIAL NOTICES.

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We cannot undertake to return MSS. not used.

MANAGER'S NOTICES.

THE INDEX TO THE LANCET.

THE Index to Vol. II. of 1900, which was completed with the issue of Dec. 29th, and the Title-page to the Volume were given in THE LANCET of Jan. 5th.

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